EDITORIAL
DOMESTIC ENGINEERING

Whole No. 1392 CHICAGO, AUGUST 16, 1919 Vol. 88, No. 7

EXCHANGING DOLLARS AND IDEAS.

A LIVE association secretary, dwelling on the importance of co-operation in the plumbing and heating trade, expressed himself this way: "You can't expect to get something for nothing in any phase of life, because the law of compensation takes care of that. In association work, the more you put into it, the more you get out of it. There are twenty of us present in this meeting. If you all take a dollar bill out of your pocket and exchange dollars, you're nothing ahead. But if, instead of exchanging bills, you exchange ideas, each of you will leave this room with twenty ideas. In this case, without any financial transaction, you have, as a matter of fact, made money, because good ideas, if adopted in your everyday business, are going to help you along the road to prosperity. No man should come to association meetings with the sole idea of taking and not giving. That is not fair, either to you or your competitor. Co-operation means unselfishness. Don't think you know it all, because you'll soon find out that you're wrong. Let's practice, not preach, the get-together spirit. Only in that way will we get ahead individually and collectively."

Mr. Secretary is right! Association meetings **will** be successful, if every member will offer his views freely. Frank discussion eliminates suspicion. Simply because men are competing in business is no reason why they should be enemies. There is every reason why they should be friends.

Association meetings can be more valuable where a regular program of discussion is prepared and carried out. This has been done in some quarters and found helpful in getting large meetings and proved profitable to all. There is no end to matters of importance that can be talked about. Trade extension, seasonable business, meeting mail order house competition, overhead expense, window displays, advertising, developing country business, form letters, etc.

The question of co-operative advertising has been talked about. This means a fund raised by subscriptions from association members, to educate the public as to the importance of modern sanitary plumbing. Co-operative movements, locally or otherwise, have been successful in many fields and can be in the plumbing and heating field.

The Trade Extension Bureau is the best example that the plumbing and heating trade ever had.

SHOP OWNERSHIP EASILY ACCOMPLISHED.

THE plumbing and heating trade has deplored the fact innumerable times that it is too easy to get into this business. A man gets a knowledge of the business as a journeyman and, after saving a few dollars, decides to embark for himself. He becomes a master, knowing little or nothing of business methods, overhead expense, or anything else essential to the business side of the enterprise. We all know the result, and it is therefore surprising to find the business agent of a plumbers' union in a prominent city telling how easy it is to become a master plumber. He is quoted in a well known newspaper as saying:

"A plumbing shop requires but little investment, but yields enormous profits. The young man, who can learn the trade and establish himself as a competent plumber in his community, would do well to establish a shop of his own. His tools will cost him little, and the rent of a shop, such as he would use for his trade, would be small. If he performs the double duty of journeyman and shop owner, then he will earn considerable more than the journeyman.

"The tools for this trade consist of wrenches and welding outfits, which are not expensive. A shed with a bench in it and a good vise makes a fairly good shop.

"Probably no other trade offers the opportunities that the plumbing trade does," is the conclusion of the business agent.

This article does considerable harm. It hurts the plumbing business in a city of over a third of a million inhabitants, in which it was published. People, reading of the "enormous profits" of the plumbing business, are going to hesitate about installing plumbing. Journeymen are going to think seriously of what a fine thing it is, financially and otherwise, to be a "boss."

Is this the right sort of co-operation? The business agent himself may or may not be a plumber, but evidently he has lots to learn about the plumbing business. The master plumbers' association can do a great deal towards educating him, and at the same time to acquaint the public with many things it doesn't know about plumbing.

It seems fair to assume that, if such statements can get into public print, there is every reason why propaganda of a valuable and constructive nature, which can be furnished by aggressive associations or individuals, should be given every consideration.

TESTING MODERN PLUMBING INSTALLATIONS

How to Test Sewers, Drains, Soil, Waste and Vent Piping by Water, Air and Smoke

By Robert J. Gordon

BEFORE plumbing codes came in force and plumbers and plumbing became regulated by them, there were practically no plumbing tests.

Of course, that was more than twenty-five years ago, when plumbing was a kind of a random business. By random I mean that plumbing systems were designed and installed at random, each designer and each mechanic doing things his own way. Some were good, but many were bad installations, as was evidenced by the ripping out and overhauling of these pre-code jobs in later years.

To make the systems so that they would not leak water nor sewer gas was the object. But whether they would leak sewer gas, or not, was very uncertain for few installations were really tested.

Since plumbing codes came in force, however, conditions are different. Every code specifies some forms of tests, and plumbers, operating under the jurisdiction of codes, now have to test every installation. Any code, which may fail to specify tests, is insufficient and should be amended accordingly.

No plumbing system can be considered completed and safe, until it has been tested and proved to be absolutely water and gas-tight.

The question: "What is the best way to test plumbing installations?" is a vital one. But it has been thrashed out by skillful men in our trade, and the matter has been settled very definitely. It has been settled in such a way as to be now almost universally accepted as a standard.

There is no one test that can be employed as the best for all cases. Broadly speaking there are two, and these two are subdivided into two each, making four kinds of tests applicable to the work.

These tests are: 1. The Water Test. 2. The Air-Pressure Test; both for roughing. 3. Smoke Test. 4. Peppermint Test; finishing.

Note that tests 1 and 2 are applied to the roughing, while 3 and 4 are applied to the finishing.

"Why not adopt one form of test for all the work," you may ask, "and thus standardize closer still?"

It is not practical to have only one test or one form of test.

Plumbing installations are erected in such a way and at such times that they must be tested at two periods. They must be tested when the roughing is installed and before it is concealed. Then later the finishing, such as fixture connections and traps, etc., must be tested. This is the final test.

The roughing test is one which tests only the piping system. It therefore can, should be, and is, a pressure test. The piping can easily stand a heavy pressure if the pipes are not cracked and the joints are well made. In most cases they can easily stand a pressure of 100 pounds. The finished job, that is after all fixtures are set and traps sealed with water cannot stand a test greater than the resistance of the the trap seals.

It is evident then that water or compressed air is quite suitable for roughing tests, while air, or a gaseous body of some kind, is essential for the final test. The pressure of the final test need ordinarily not exceed one inch of water column.

The Water Test.

In making a water test, all openings in the house drainage system are closed with plugs or otherwise. The system is then filled with water up to the highest vent opening above the roof. All air in the piping naturally escapes through the roof openings, and all the piping consequently becomes filled with water except unventilated branches such as closet bends, etc., where air will become locked.

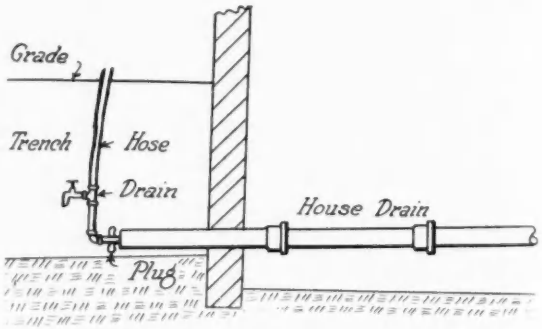


Fig. 1.

This untrapped air, however, does not make the water test less efficient. It will soon leak out, if there is a leak in such a branch, then water will ultimately show the leak.

After the system is filled with water it is allowed to stand that way—full to top of vent—for a few hours. If the water line falls in vent pipe, it is evidence that there is a leak somewhere. That leak must be found and made right. If the system is tight the water line will stay up at top of vent, which is all the evidence required by an inspector, that is after he has satisfied himself that all the system is under the full water pressure of that hydrostatic head.

The water test is the most generally used test for the roughing because of its practicability. Not only is it easily applied, but it effectively and quickly shows where the leaks are. The plumber does not lose time hunting for any leaks.

But the water test has a disadvantage. It cannot be used during freezing weather. Then there is a liability of the piping being frozen when under test. A whole system can

easily be burst and ruined by a plumber filling the piping and letting it stand subject to frost.

The Air-Pressure Test.

Therefore, a compressed air test of, say, ten pounds pressure per square inch is frequently used as a substitute for the water test. All ends are closed tight. The pressure is pumped up. A gauge placed on the system shows the pressure. A cock on the air pipe between pump and system is shut tight, and the pressure allowed to remain on the system a few hours.

If the system is tight, the gauge pointer remains stationary. If the pressure is the same at the end of the testing period as at the beginning, without any make-up, air having been pumped in, then the system may be considered safely tight.

If, however, the pressure falls during the period, then there is a leak somewhere which must be found and repaired. To find that leak frequently is a problem. There is no water to leak out and show it. The pressure is too high to show it with smoke pumped into the system. Frequently its location can be determined, in a general way, by a hissing sound. But to locate the exact spot is the real problem.

That may be done by painting soapy water over the suspected spots. As soon as the soapy water covers the leak the escaping air will blow soap bubbles. That is evidence of an air leak.

In a case where the gauge drops, and the vicinity of the leak cannot be located by sound, it may be helpful to pour some ether down the stacks or, better still, into the pump air pipe; then pump ether fumes into the system, leaving vent outlets open till ether comes from them, then close them, the ether vapor in the system will then be forced out through the leaks and they may thus be detected by odor. Oil of peppermint may be used instead of ether and perhaps would be safer, as ether is explosive.

These then are the tests for the roughing. Let us now consider the final tests.

The Smoke Test.

The smoke test is generally conceded to be the best final test, and the peppermint test is a close second, if properly applied. In the smoke test, the idea is to fill the entire plumbing system with smoke under a pressure of one inch or more water column. A machine to produce the smoke is necessary. The machine is composed of a smoke-producing chamber, a pump to blow smoke into the drains, and a gauge to indicate the pressure within the system.

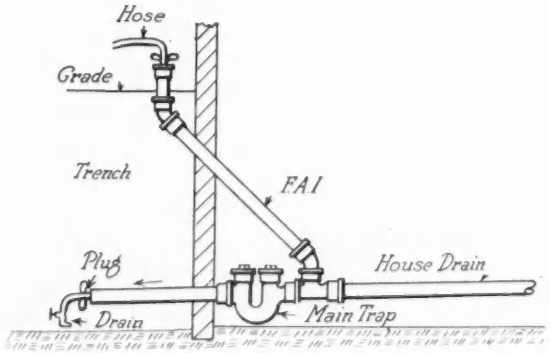


Fig. 2.

The smoke may be made by the slow combustion of oily cotton waste such as is found in machine shops, at the pipe vise, etc. The waste just smoulders in the machine, the smoke so produced being blown into the system by a fan, a bellows, or other type of blower.

The smoke hose may be attached to the fresh-air inlet, or to a vent outlet, anywhere so long as smoke can be blown into the pipes without any getting into the building.

Smoke is pumped into the system through the hose. The vents are left open till smoke comes from them in a dense cloud. Then each vent is hermetically sealed with a cap or plug.

When the last vent is capped the system is supposed to

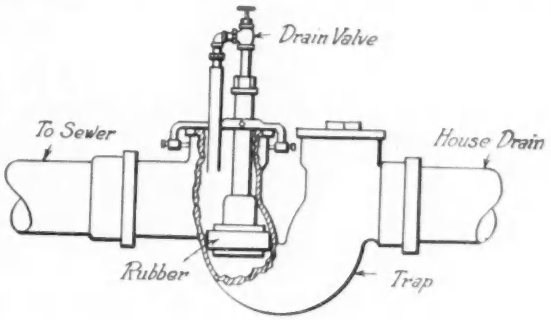


Fig. 3.

be entirely closed, and entirely full of dense smoke. As the smoke machine pump, or blower, is kept at work more smoke is pushed into the system, which consequently increases the pressure, which increase is noted by a gauge or floating drum at the smoke machine.

When the pressure rises to say one inch of water column, the machine is stopped and the gauge is watched carefully. If it falls, it is evidence of a leak. If it stays up it is evidence of a tight system. That's all.

Should there be a leak anywhere, the question, of course, is to find it. In such a case the apprentice continues to work the smoke machine, while the journeyman goes through the building to see if there is any smoke, and if so to trace it to the leak. The leak is pointed out very forcibly by a jet of smoke blowing from it.

Now you see the value of the smoke in the system.

The Peppermint Test.

The peppermint test is not so efficient. It is made by pouring oil of peppermint into the smoke machine tube and blowing the vapor all through the system, then capping the system as for a smoke test. The peppermint vapor escapes into the house through the leaks and soon permeates the hole house by diffusion.

To find a leak by this test you have to depend on the acuteness of your nose. If it is a good "smeller," you may be able at times to locate leaks quickly with peppermint. But usually it is rather an uncertain test. You can see smoke, and you can put your finger right on a leak, when you see smoke issuing from it. But you cannot see peppermint vapor and therefore can only guess the location of the leak. You cannot, for certain, point out any particular spot as being the leak, at least, not always.

So much then for our general description of these different kinds of tests. Let us now say something more tangible about the two most important ones—namely the water test—and the smoke test.

Application of the Water Test.

Imagine an ordinary large residence installation with one main house drain running out through cellar wall to a septic tank, or city sewer. The cast iron pipe terminates, say 5 feet outside of cellar wall, but is not yet connected to the earthen house sewer outside, for the roughing has not yet been tested. Fig. 1 shows how the test may be applied in a case of this kind, assuming that there is no main house trap on the system. A test-

ing plug is attached inside end of pipe. Its end is connected to a garden hose having a shut-off cock somewhere convenient, and a drain cock down near the plug as shown. The ends of branches at fixtures are all closed, but roof vents are all open.

The boy goes on roof with enough plugs to close all the lower vents, when water begins to overflow them, but leaves the highest vent open. The plumber turns on the water, fills the entire system and shuts it off on signal from his boy on the roof, which signal is given when water overflows the highest vent. After this test is made

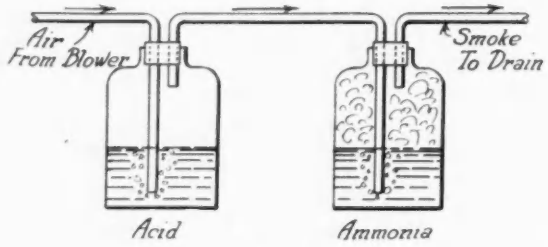


Fig. 4.

and pipes proved tight and approved by the inspector, the drain valve at bottom is opened, and the system allowed to drain empty into the trench. The earthen pipe is now connected up and the trench filled in.

Should there be a main drain trap and fresh-air inlet on the system, as in Fig. 2, the bottom end may be plugged and provided with a drain valve, while the fresh-air inlet may be plugged, and a filling hose attached to plug as shown, or hose may be connected to lower plug if desired. In any case it is advisable to loosen up the plug in the fresh-air inlet so as to let out the air and allow this pipe to fill entirely with water. The same thing applies to letting air out of sewer side of trap. The clean-out cap on sewer side should be loosened, then tightened again, when water comes out from under it, otherwise this water test would be the same as previously described for the more simple case shown in Fig. 1. Should the sewer pipe be connected up and trench filled in before roughing test is made, and should there be a main drain trap in building, then the special draining plug, shown in Fig. 3, will be very useful.

The rubber ring of plug is expanded in a position in trap, where a tight connection can be made. It is clamped to the hub to prevent plug from being blown out by the pressure and flood the basement. The drain valve on top delivers into a short length of hose which is shown hanging down into sewer side of trap. That valve and hose make it possible to drain the system into the sewer after the test. It would be rather awkward to loosen up an ordinary plug with the full test pressure behind it. The plug might blow out entirely and half drown the plumber unless, of course, the stem is secured by attachment to hub, substantially as in the plug shown in Fig. 3.

The Application of the Smoke Test.

Now let us look into the principles of the two kinds of smoke machines in common use.

Fig. 4 illustrates the fundamental principle involved in the chemical smoke test. One jar contains some acid, such as nitric or muriatic. The other contains ammonia. The air pipe from bellows or blower, extends down through the bung and terminates below the acid line. The outlet pipe from this jar does not reach down as far as the acid. In the same way the pipe, leading from acid jar, extends down through bung in ammonia jar and terminates below the ammonia level as shown. The outlet pipe from this jar connects to fresh-air inlet, roof vent or any other convenient part of the house drainage system. The illustration is clear and the operation is obvious.

Air is blown through the acid. The acid fumes are then blown through the ammonia. The mixing of acid fumes and ammonia fumes produces a dense smoke which is forced into the house drains, and shows itself at any leaks in the system.

Fig. 5 illustrates the principle involved in the waste burning smoke machine. A pot, say, 10 inches in diameter by about 8 or 9 inches deep and open at the top, contains the oily waste. This pot is surrounded by a water jacket, and the floating drum has its sides submerged in the water jacket. The waste is supported on a grate with a 1-inch air space under it. The air pipe from blower, or bellows, connects into this air space. A layer of burning waste is spread over the grate, it is thereupon covered with about 4 inches of fresh oily waste, and the cover is put on.

The air from blower flows slowly up through the fire, producing dense smoke, which flows down through the stand pipe and goes into the drainage system.

When the correct smoke pressure is raised in the house system, the drum will float. And if pumping is continued, the smoke will lift the drum out of the water jacket and

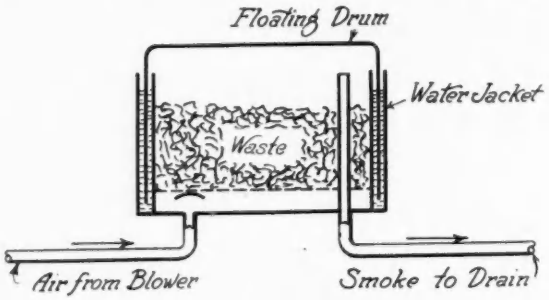


Fig. 5.

escape to the atmosphere there, rather than blow the seals out of the house traps.

If the plumbing leaks, the drum will slowly fall, a stop cock or air pipe being then shut. But if plumbing is tight, the drum will float and continue to do so, which makes it a perfect indicator.

A great deal more can be said about tests and testing. Perhaps we will find space to continue this subject in another issue of this publication.

The "New York Herald" says that foodstuffs are going to Europe at a rate of $11,871,396 daily. In June, exports of foodstuffs were $356,141,856. Food shipped to Europe in twelve months amounted to approximately $2,400,000,000.

German marks are quoted in the neighborhood of 6 cents apiece. This is the lowest figure yet seen. It compares with a quotation of slightly more than 8 cents three weeks ago, when cable transfers with Berlin first were resumed. At 6 cents the mark is at a discount of nearly 75 per cent. Figuring the other way around, it means that the dollar is at a premium of nearly 300 per cent in Berlin. In other words, the man in Berlin who wants to do business with the United States has to spend almost four times as many marks as he did before the war. In reality he has to pay a good deal more, because prices for all kinds of goods have gone up. Thus, the German has to pay a 300 per cent premium on exchange, plus the rise in prices.

PLACING HOT WATER RADIATORS BELOW BOILER LEVEL

Method of Proportioning Radiating Surface to Promote Circulation at Various Levels

By Wm. Hutton

WHEN all of the radiation in a hot water heating system is placed at a level higher than that of the heater, it is difficult for even an inexperienced mechanic to plan a system, which will not circulate water through some of the radiators at least.

Even with poorly planned connections, circulation of a sort may be established and maintained with a boiler on one floor and radiators placed on others above it, but it requires very careful study of the principles of circulation to devise a plant, which will satisfactorily heat radiators on the boiler level or beneath it.

The fact that it can be done is known to almost all fitters, but perhaps not very many are familiar with the methods of proportioning a system, which will assure thorough circulation, or know what to do, should their plan fail to operate properly.

To get a clear understanding of the principles, which cause water to circulate in a piping system, imagine a line drawn through the job at a point approximately on the level of the crown sheet of the boiler which we will call the "heating center." All piping and radiating surface above this line tends to promote or accelerate circulation. All piping and radiating surface below it retards circulation. If the surface above the heating center greatly exceeds that below it, satisfactory circulation is possible. The height, at which the radiation is placed, has an important bearing upon the matter also, as will presently be seen.

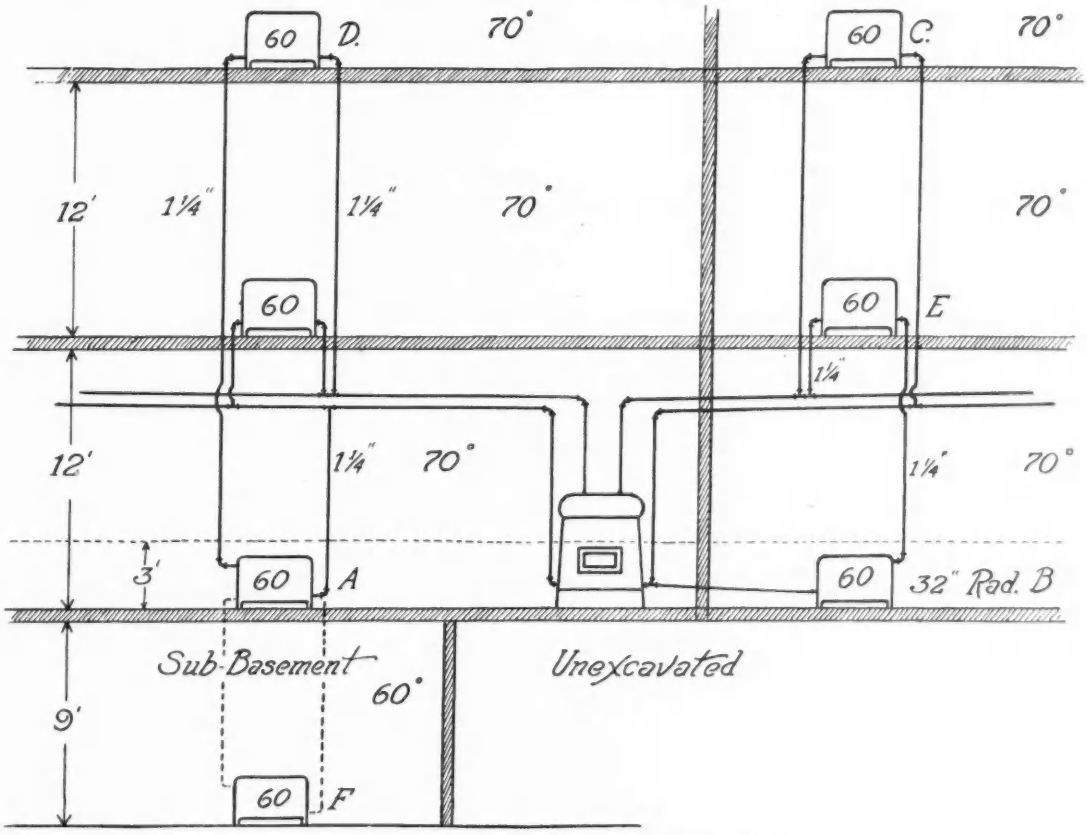


Fig. 1.—Connections to Radiators on Various Floors.

As is well known, the force which causes circulation is the difference in weight or density of the water in the various parts of the system. This force is very slight and amounts to but one grain or 1-7000 pound per sq. in., per degree difference in temperature per ft. of height. In ordinary heating systems this height means the distance from the heating center to the top of the highest radiator. In a system, where one or more radiators are placed on the same level as the boiler or at a lower level, the effect of the surface below the heating center has to be carefully considered, and the motive force available must be ascertained in order to proportion the work.

In the illustration in Fig. 1, a heating system showing radiators in the basement, sub-basement and first and second floors is shown. Before such a job could be planned, it would be most important that the effect of these lower radiators be found, and this is done by the following rule:

Rule.—To find the difference in height between the heating and cooling centers, find the number of B. t. u. emitted at each separate height and multiply by the height in feet above or below the heating center. Subtract the result representing the retarding force from that representing the accelerating force and divide the remainder by the total B. t. u. emitted. The result will be the distance, which the center of the cooling surface is above the center of the heating surface.

In the job illustrated, there is a radiator marked D on the second floor, and one in the basement marked A, which may be taken as a working example of a method of making the necessary connections. The heating center of the boiler is approximately 3 ft. above the floor level. The first floor is 12 ft. in height and the radiator D 38 inches high. Therefore the cooling surface, represented by D, is 22½ ft. from its center to the heating center.

The risers are 1¼ in. in diameter, and the average height of this surface may be taken as 10 ft.

The radiator A stands under the heating center, and its center or average cooling surface is therefore 1½ ft. below it.

Assume that water enters radiator D at 170 degrees and leaves it at 160 degrees, entering radiator A at 160 degrees and leaving it at 150 degrees; then the average temperature of D is 165 and that of A 155 degrees. The temperature of the flow riser to D is 170 degrees and the return riser 160 degrees.

Take the usual basis of computing heat emission from hot water radiators, 1.75 B. t. u. emitted for each degree difference in temperature of the air surrounding a radiator and the water inside it. Allow 2 B. t. u. emitted for pipes.

Area of radiator D, 60 ft.
Area of flow riser, 8.5 ft. above heating center.
Area of return riser, 8. 5 ft. above heating center.
Area of return riser, 1.25 ft. below heating center.
Area of radiator A, 60 ft. below heating center.
Applying the foregoing rule we have:

60×(165-70)×1.75=9975 B. t. u.
8.5×(170-70)×2 =1750 B. t. u.
8.5×(160-70)×2 =1530 B. t. u.
60×(155-70)×1.75=8925 B. t. u.
1.25×(150-70)×2 = 200 B. t. u.

Total.....22,380 B. t. u. emitted.
9975×22.5=224,437
1750×10 = 17,500
1530×10 = 15,300

257,237 above heating center.
8925× 1.5= 13,387
200× 1.5= 300

13,687 below heating center.

257,237—13,687=243,550÷22,380=10.9 equivalent head of water to maintain circulation in radiators D and A.

In order to find out just how much force is available from this 10.9 ft. head, find what is the actual difference in the weight of the water in the flow and return risers.

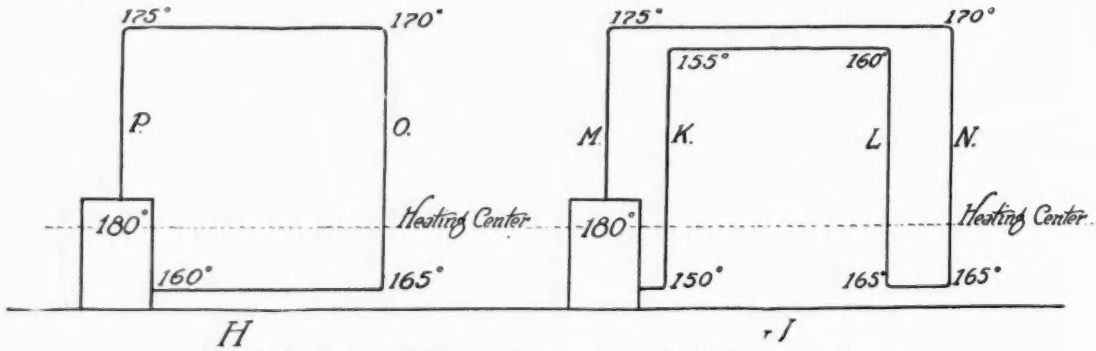


Fig. 2.—Conventional Diagrams Illustrating Principle of Circulation in Mains.

The weight of 1 cu. ft. of water at 150 degrees is 61.204 lb, and at 170 degrees it is 60.801 lb. The cubic contents of 10.9 ft. of 1¼-inch pipe amounts to 0.092 cu. ft., showing a difference in weight of 0.037 lb. or 259 grains. This is the total force available to maintain circulation in the lower radiator.

It is interesting to compare the result with that given by the radiator C in the same illustration. Here the connections are the usual style, but as there is no retarding influence, the average cooling center is the center of the radiator and is therefore 22½ ft. above the heating center.

A riser of 1¼-inch pipe 22½ ft. high contains 0.19 cu. ft., which at 150 degrees weighs 11.552 lb. and at 170 degrees 11.628 lb. This difference of 0.076 lb. represents 532 grains, the weight which causes the water to circulate.

If it is desired to find the force in actual head of water use the following formula. Let H equal the height of the column (22.5 ft.).

$$h=(H)\ \frac{22.5\times 60.801\ \text{(weight of 1 cu. ft. at 170 deg.)}}{61.204\ \text{(weight of 1 cu. ft. at 150 deg.)}}=22.35$$

22.50—22.35=0.15 ft. or about 1¾ in. water head.

That is all the head that is available when the cooling surface is entirely above the heating center. When it is placed as in radiators D and A, with the figures already given, the available head is only about ⅞ inch.

Consider the effect of a lower elevation of the cooling

surface, as it appears in radiator E on the first floor. Assume that the water enters this radiator at 170 degrees and leaves it at 160 degrees and that it enters radiator B at 160 degrees and leaves it at 150 degress. Take the average temperature and heat emission figures and proceed as before.

60 × 95×1.75= 9,975 Radiator E.
1 ×100×2 = 200 Flow riser.
4.5× 90×2 = 810 Return.
60 × 85×1.75= 8,925 Radiator B.

Total 19,910 B. t. u. emitted.

9975×11.5=114,712
200× 8 = 1,600
810× 5 = 4,050

120,362 above heating center.
8925× 1.5= 13,387 below heating center.
120,362—13,387=106,975 ÷ 19,910=5.4 equivalent head.

How then would the location of the radiator in the sub-basement affect the method of connecting it and the other radiators? If the same rule is followed, it will be found that 10,455 B. t. u. additional to the divisor must be made and that the figure representing the retarding influence must be increased by 104,550. Then 257,237—118,237=139,000÷32,835=4 ft., the equivalent head to maintain circulation in radiators D. A. F.. This head is altogether too small, and it would be necessary to increase the cooling surface above the heating center. This could be done by taking in the radiator on the first floor and making the risers larger in diameter or by making two separate loops, using D and F together, and A and the first floor radiator on the same loop.

The method of making the connection back to the return main on the ceiling of the basement at radiator A may seem peculiar, but it is perfectly practical, and in fact lends itself to better circulation than the method of making the return connection shown at radiator B.

Reference to the illustrations H and J, in Fig. 2, may make this clear. A perfect circulation is established in the loop, shown in H, as soon as heat is applied to the boiler. The temperatures assumed at the various points are for purposes of comparison. In practice the length of the pipe line and other local conditions would determine the loss in the circuit, but a drop of 20 degrees is small, as is well known.

Now, let us assume the temperature falls in the same proportion, when the water is passing around the circuit shown in J. It is understood that the temperature drop in the leg O in H is the cause of the water of lower density in the boiler passing up through the leg P to replace that falling in the cooler leg.

Similarly the cooling of N causes water to rise in M, and the cooling in K must of necessity cause it to rise in L. So we have water rising to the return main on the basement ceiling by reason of the drop, which it again must make to reach the boiler. Of course the diagrams are conventional illustrations. It would be necessary to proportion the cooling surface to apply the principle and to locate it carefully, when several connections are made to one main. But it will be recognized that it is cooling surface, above the heating center, and therefore not so much a retardant of circulation, as if it were all below the heating center.

The method of stopping circulation through radiator A is simple. A by-pass is fitted with a valve, and when this is opened, the water passes back into the return main without falling through the radiator. It, of course, takes the path of least resistance.

Anyone interested in this method of heating radiators, in unusual situations, can follow out the principle involved very readily. For instance, where a garage or other outbuilding is to be heated, it might easily be done by passing the loop through a second or third floor radiator before leaving the cellar. By proper application it is quite possible to have the underground mains buried deep enough to be perfectly secure from frost, lower than the boiler and yet circulating water perfectly. All that is required is to maintain a preponderance of cooling surface above the heating center of the system, remembering that the higher it can be placed, the greater will be the efficiency of the circulation and the less the amount of surface required to provide the motive force.

NEWS OF THE WORLD.

It was announced from London, August 5th, that figures disclosed in statistical tables now issued by "Lloyd's Register" show that, as compared with five years ago, shipping owned in the United Kingdom has decreased by 2,547,000 tons gross. American sea-going tonnage has increased by as much as 7,746,000 tons gross.

It has just been announced from Brussels that a commission, consisting of Belgian and British architects, has been formed to study and report on the reconstruction of Ypres. The town is to be rebuilt on the same site, and the inhabitants will be required to preserve in rebuilding homes the same style, which characterized Ypres before the war.

The United Press report states that cables from commercial and industrial centers of allied countries show that many European countries are facing food conditions that are approaching a crisis. In Great Britain the Government is spending $250,000,000 a year to keep price of bread down and fixes price of meat and sugar. The food problem in France is one of quantity rather than price. The Government fixes maximum prices. A commission has been created in Canada to handle this year's grain crop. Australia has vast surplus of food and the Government has difficulty in keeping prices high enough to reward production. Italy's bread supply alone cost the Government $400,000,000 a year. Press and public in Japan are urging the Government to place maximum prices on food and other necessities.

The "Wall Street Journal" states that the German Government will spend $375,000,000 to reduce by 50 per cent the cost of food to railroad employes, in lieu of higher wages sought by the men. Granting of wage demands would have cost $1,000,000,000, which, added to existing deficit, would have brought annual total loss from operation of German railways to $2,000,000,000, more than the country could have raised from taxation in addition to other burdens.

The American steamer "Thala" sailed August 7th for Hamburg, with the first cargo from Philadelphia consigned direct to a German port since the war. Most of the cargo of 6,000 tons, consisted of packages of food, clothing and toilet articles sent by individuals to relatives and friends in Germany.

The Copper Export Association sold 1,000 tons of copper to Germany last week.

Senator Calder stated before the Senate, August 8th, that 1,000,000, homes to cost about $4,000,000,000 are needed in the United States. With both material and labor short, Senator Calder said, that the Government should provide a system for easy loans to those desiring to build homes.

WHAT THE PLUMBER SHOULD KNOW ABOUT THE ADVERTISING OF ELECTRICAL APPLIANCES.

By C. Hill Griffith.

MENTION advertising to some master plumbers, and they will immediately "put up their guard." They jump to the defensive with two arguments: (1) "It won't pay for *me* to advertise," (2) "It is too expensive—I can't afford it." Then they will set out, if pressed, to show that advertising may be all right for *some* plumbers—perhaps for the big concerns—but, well, *my* business is different.

If it was the intention of this article to enter into an argument regarding advertising we might come back with the remark, "Perhaps that's why your business *is* different—because the big, prosperous plumbing establishment has become what it is by judicious advertising." But instead, we will outline briefly some of the principles and advantages of advertising and leave it to your good judgment to decide what to do.

While the following is written primarily for the plumber, who has decided to handle electrical appliances and supplies, much may be taken to heart by the man who believes he has enough to do to look after his plumbing business alone.

Is advertisng a gamble?

Yes—if you play it like a game of chance. If you spend your advertising money on a "hunch," the chances are all against you. But if your advertising is properly prepared and placed in a medium, which you know will reach the people whom you want to reach, it is nearer to being a "sure thing."

Selling is advertising, and advertising is selling. If you are hoping to sell electrical appliances profitably, you must advertise them. The salesman who is presenting the desirable features of an electric grill is giving information and answering questions. He may, if he is a good salesman even anticipate what the customer is going to ask and have the question answered before it is raised.

The advertising writer does the same thing in almost the same way. But, not having his customer before him, he anticipates the whole situation and, keeping the customer in his mind's eye, presents the same arguments—on paper.

Because of the difficulty of keeping the prospective customer's attention, when he is not face to face with the salesman in your store, the advertisement must state all the facts and arguments in the fewest words possible.

Imagine that you and a lot of other merchants are seated on a stage with an audience of thousands of people before you. Each merchant is to be allowed just so many minutes to present his proposition to this multitude. You are charged for the privilege so much per minute and you have purchased the number of minutes you think necessary to impress your story on the minds of the people.

You are going to look before you leap; you are going to think well before you speak. You have planned your speech before hand, and will make every word count. You will present your goods in the most attractive way possible. You will leave your audience so impressed with your arguments that they will gather around you after the meeting and place orders for your goods.

You will not try to crowd into those few minutes every word you can possibly utter. Rather, you will present your case in the fewest possible words, in the clearest, most convincing way possible.

Follow the same practice in writing an advertisement.

In advertising and selling electrical devices and appliances the one big thought to always keep in mind is this:

Sell the Idea—Not the Thing.

Sell the idea of sweeping better and more easily with an electric cleaner—don't try to sell the thing of aluminum and steel. Sell the idea of cooking breakfast electrically—not the electric grill as a thing of metal. Sell the farm lighting plant for what it will do for the farmer—not as an engine, generator and some wire. Keep this thought always to the front in your advertising; make the prospect want the appliance for what it will do, make him want the device so badly that he is sold even before price is mentioned.

Advertising electrical merchandise after all does not differ from the proper advertising of many other sorts of things which make living better. Therefore the following "Don'ts" will fit not only the advertising of things electrical but may also be applied to all of your advertising.

Advertising Don'ts.

Don't forget that advertisng is selling.

Don't make statements that you cannot back up.

Don't make direct comparisons with other goods of the same type.

Don't forget to print your firm name always in the same way.

Don't overlook the importance of address and telephone number.

Don't fail to talk to your prospects—particularly in circulars and letters—as if you were face to face. Use the natural, direct appeal.

Don't forget that the follow-up is as important as the advertisement.

Don't forget to change your copy frequently. It will keep up the interest.

Don't use all the type styles in the shop. Select a good strong style and stick to it.

Don't crowd your copy. White space is not waste space. Neither should you crowd your ideas; one idea at a time is better than a jumble of suggestions.

Don't be a spasmodic advertiser. Be regular in your advertising habits.

Don't buy space in a program and expect to get results. If you *must* buy program, special issue and one-time space charge it up to charity—not to advertising.

Don't expect to be always able to check advertisng results. You must have some faith. If you haven't you had better not advertise.

Don't overlook the fact that advertising can create good will.

Don't make your arguments negative, as "Don't do this" or "Don't do that." Make, in your advertising strong, positive statements, as "You need this," or "This will do so and so." (These "Advertising Don'ts" are not to be taken as examples of advertising phrasing!)

And, finally, don't overlook the advertising copy and cuts which many manufacturers and jobbers will supply. They have spent a great deal of money in preparing newspaper ads, booklets, folders, envelope enclosures and posters. Make use of this assistance.

Tie up your local advertising with the national magazine advertising of the manufacturer. While the manufacturer is telling millions through national mediums "You will clean better with the Blank Electric Cleaner," you should be telling the thousands who read them in your locality, "See the demonstration of the Blank Electric Cleaner at our store." That's tying up with National Advertising. It pays!

The Reason.

"Does your chauffeur gossip about your affairs that you call him a leaky vessel?"

"No; I call him that because I am always bailing him out."—"Baltimore American."

REMOVING OIL *from* CONDENSATION

Devices Eliminating Oil from Condensation in Steam Heating Systems—Their Installation and Operation

By Charles L. Hubbard

IN a previous article we have discussed the effect of oil in boilers and some of the methods employed for its prevention in connection with heating systems, where the condensation from exhaust steam is returned to the boilers and used over and over again. In that article we considered only methods employed for removing oil from the steam before entering the heating systems, an arrangement which should always be used, and which in many cases will prove sufficient with certain grades of oil and where the most efficient types of separators of proper size have been correctly installed. However, there are plants where, for various reasons, sufficient oil gets by the separator and returns in the condensation, to cause more or less trouble in the boilers.

While a good separator will remove a high percentage of oil from the exhaust, it can only catch such particles as are in suspension in the form of fine globules. In addition to this, a certain proportion of the oil is vaporized, depending upon the temperature of the steam and the character of the oil, some grades being more volatile than others. Oil in this form cannot be removed by a mechanical separator, and appears in the condensation, together with a small amount which has passed through the separator without being removed.

In many cases this total may be so small as to be negligible, while in others it may be sufficient to cause trouble

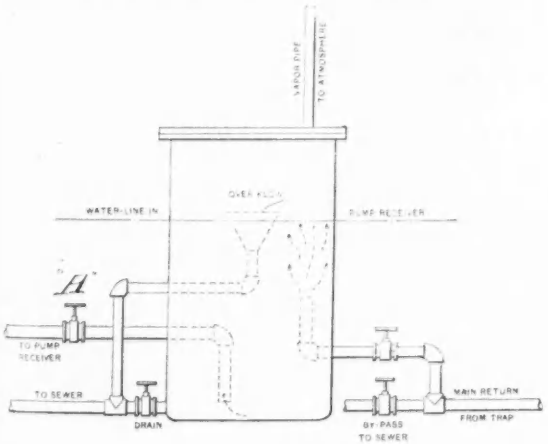


Fig. 1.

or appreciably lower the efficiency of the boilers. It has been estimated on good authority that a film of oil, 1/1000 inch in thickness, will offer as great a resistance to the flow of heat as an average scale 1/10 inch thick, or of a steel plate 10 inches thick.

Experiments, reported in the transactions of the Institute of Naval Architects, show that the loss of efficiency of boiler heating surfaces due to a thin coating of oil may range from 8 to 15 per cent.

Mention has already been made, in a previous article, of the effect of oil on scale formation and the danger from "bagging" of the boiler shell when oil is present in sufficient quantities.

Testing for Oil.

If there is any suspicion that oil is coming back in the condensation, the matter may be settled by a simple test, as follows: Take about 5 ounces of the water to be tested

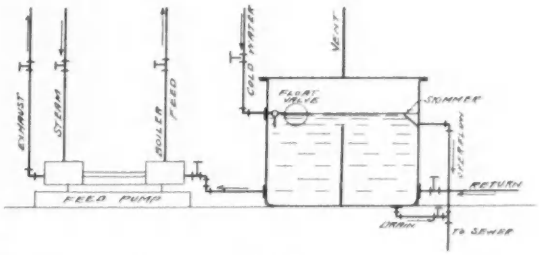


Fig. 2.

and place it in a clean 8-ounce bottle, and add 1 ounce of gasoline; cork and shake thoroughly and let it stand for about 15 minutes. The gasoline will dissolve the oil contained in the water and will float on its surface in the bottle. Draw this off with a small glass syringe or a medicine dropper and place in a small clean white porcelain dish. Set this in a dish of hot water, and allow the gasoline to evaporate, adding more hot water to the outer dish from time to time, as may be necessary. If oil is present, a fatty substance will be left in the bottom of the porcelain dish after the gasoline has evaporated.

It is very important that no flame be brought near the evaporating dish; neither should a flame be exposed in the room while the operation is being carried on, nor for some time after.

It is not usually of importance to determine the exact quantity of oil in the water, as any amount which can be detected will be undesirable.

Methods of Oil Elimination.

Oil is removed from condensation either by *flotation* or *filtration* or by a combination of the two processes. Flotation or skimming consists in allowing the condensation to come nearly to rest in a tank, or series of tanks, in such a manner that the oil has an opportunity to rise to the surface, from which it may be removed by floating or draining off through a properly arranged outlet or by use of a specially formed skimmer. A device designed by Prof. S. H. Woodbridge and shown by the writer, in "Power Heating and Ventilation," is illustrated in Fig. 1 and serves well to illustrate the principle of flotation. The separating chamber in this case consists of a cast-iron blow-off tank 24 inches

in diameter by 48 inches in height. The oily condensation from a trap in the main return line enters the tank, at the right, as indicated, and discharges upward so as to disturb the water at the bottom of the tank as little as possible. A connection is made with the receiver of a feed pump, which returns the water to the boilers automatically in the usual manner. Connection is also made with the sewer through an overflow ending in a copper funnel, which extends slightly

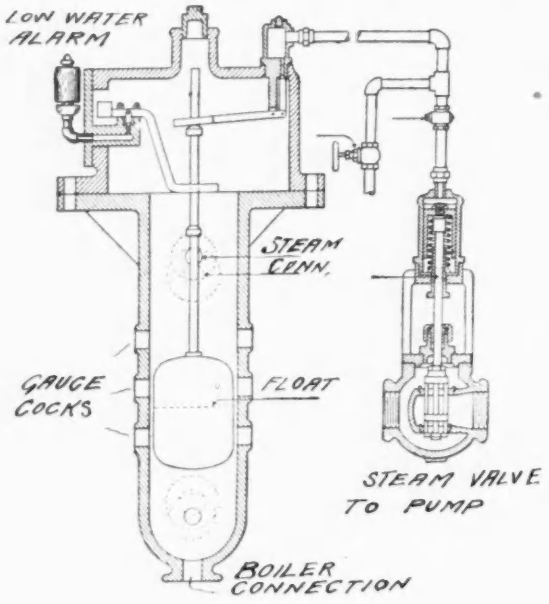


Fig. 3.

above the normal water level in the tank and pump receiver.

Under ordinary working conditions the movement of the water, through the tank, is so slow that the oil has an opportunity to separate and collect on the surface, while clear water from the lower part of the tank passes into the pump receiver.

When a sufficient quantity of oil has accumulated, the valve "A" in the receiver connection is closed temporarily, thus allowing the water level to rise above the top of the funnel and drain off the oil. As soon as this has been accomplished, valve "A" is opened and the water again passes on to the pump receiver. This arrangement answers very well for conditions, where there is but a small quantity of oil present, so that the skimming process is only necessary once a day or so.

A similar arrangement which is automatic in its action is shown in Fig. 2. The tank may be constructed of boiler plate, rectangular in form, and contains a partitition extending nearly to the normal water line, which is fixed by a float valve connected with the cold water supply. Oily condensation enters the compartment at the right, and, as it rises to overflow the partition, the oil becomes separated and floats on the surface, while the clear water flows to the pump from the bottom of the second compartment. An overflow trough or skimmer extends across one side of the tank as shown, at such a height that the water level maintained by the float valve is just sufficient to cause water and oil to constantly trickle over into the skimmer and thus pass into the sewer automatically.

The separating tank in this case serves as a pump receiver, the steam valves to the feed pumps being set by hand to maintain a constant water level in the boilers or else are operated automatically by a special boiler feeder of the general type shown in Fig. 3. The float valve in the tank simply serves to maintain a constant level by admitting fresh water instead of operating the feed pump, as is usually the case. A patented receiver and oil separator of this kind is shown in Fig. 4.

Another arrangement which may be employed with the "closed system," so called, under a slight pressure of a pound

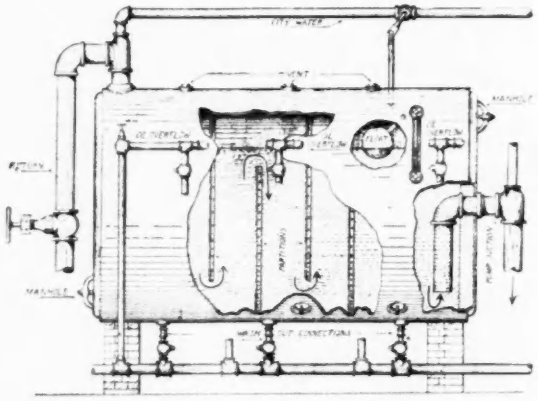


Fig. 4.

or so is illustrated in Fig. 5. In this case also the separating tank serves as a pump receiver, but there is no vent to the atmosphere and the condensation flows directly into the tank from the heating system without passing through a trap, thus maintaining the same steam pressure in the upper part of the tank as in the radiators, which should not be less than 1 pound.

The float in this case may operate either the pump or may admit cold water, as desired, making no difference as regards the oil removal.

The skimmer in this case floats on the water, being held in place by two hollow balls, so that the lower edge is just below the surface.

The skimming process is brought about by opening "B" occasionally, which, as the tank is under a slight pressure, carries out the oil, which has accumulated on the surface of the water.

There are other devices employed in the process of flota-

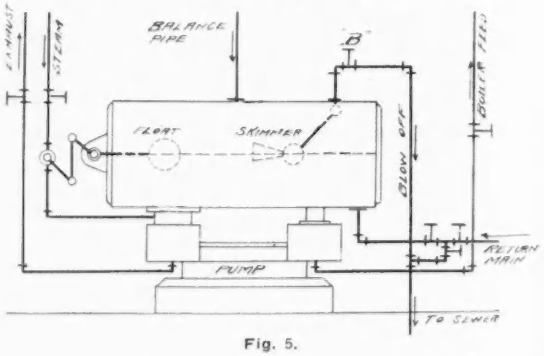


Fig. 5.

tion or skimming, but those given will serve to illustrate the principle involved.

Filtration.

There are two forms of filtration commonly employed, one using a coarse material like hay, shavings, coke, etc., and usually operated in connection with a skimming device, while the other relies on filtration alone and makes use of

a closely woven material like linen Terry or Turkish toweling in some form.

A coke filter combined with a skimming device is shown in Fig. 6. In this arrangement the return enters at the left of the tank, where a portion of the oil rises to the surface of the compartment and is disposed of by means of an overflow skimmer as in Fig. 2. The clearer water from the bottom of the compartment passes through the opening "B"

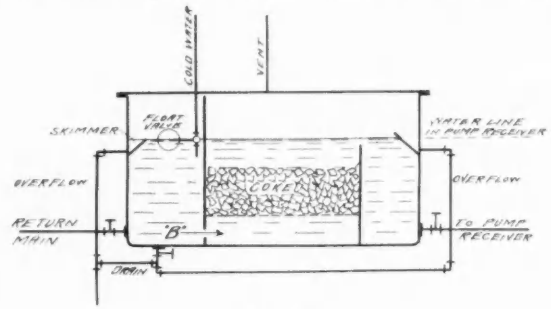


Fig. 6.

and thence upward through a coke filter, which is supposed to catch any remaining oil. Skimming from the first compartment, where the most oil will collect, is done automatically by means of admitting a small amount of cold water through the float valve as in Fig. 2. The oil which collects

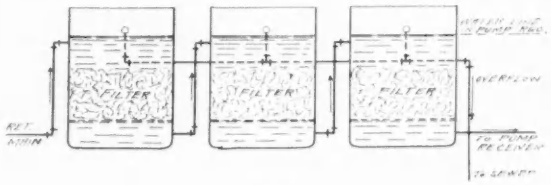


Fig. 7.

on the surface of the filter and the last compartment will be negligible, or at least very small, and it will be sufficient to provide an overflow which may be brought into action occasionally as required by closing the valve in the pump connection and allowing the water level to rise temporarily above the edge of the skimmer as in Fig. 1.

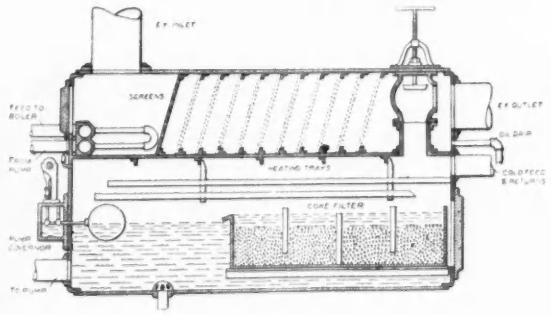


Fig. 8.

A device similar in principle but made up of a series of filter boxes or tanks is shown in Fig. 7. Oily water enters the first tank at the right and passes downward through the filtering material, which is supported on a wire grill some little distance from the bottom. From here the water passes through a pipe to the second filter, and so on throughout the series as indicated by the arrows. Any oil, which may collect on the surface of the water in the filter tanks, may be disposed of from time to time as may be found necessary by closing the valve in the pump connection and allowing the water to rise and overflow through the openings provided for this purpose until the oil has drained off.

A patented device embodying an oil separator, feed-water heater, receiving tank and filter is illustrated in Fig. 8. Exhaust steam enters at the top, as indicated, then passes through a series of screens which remove a large proportion of the oil before it enters the heating system through

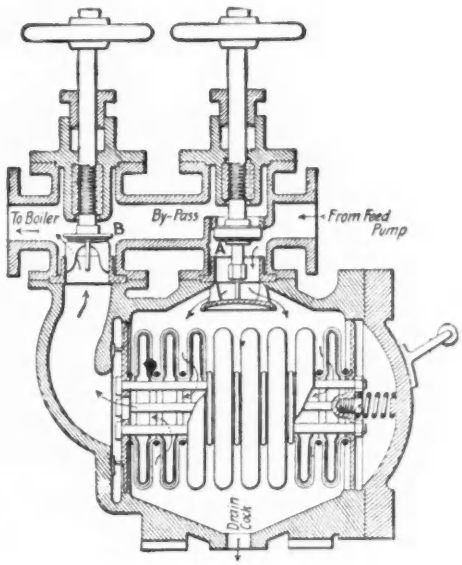


Fig. 9.

the outlet at the right. The returns are brought back into the upper part of the lower chamber and are discharged into the upper section of a series of shallow trays, over which the water flows in thin sheets before it reaches the coke filter. Purified exhaust steam fills the lower chamber and thus imparts a considerable amount of heat to the return water, which is flowing over the trays. From the filter the water passes into the receiver section of the tank and thence to the boiler feed pump, which is actuated by a float in the receiver and shown at the extreme left. After leaving the pump the water passes through a coil located just below the exhaust steam inlet, where it absorbs more heat before reaching the boilers. There are a number of combination devices upon the market similar in principle to that just described which are suitable for this work in connection with combined power and heating systems.

A typical filter of compact form, employing a woven fabric, is shown in section in Fig. 9. In this case the filtering portion of the apparatus occupies the lower chamber and consists of a corrugated cylinder built up of bronze sections covered with a bag of Turkish toweling, which is drawn down between the sections by means of cords as indicated in the cut. This manifolding of the toweling gives a large area for the water to pass through, ranging from 250 to 1,000 times that of the feed pipe, thus causing a very low velocity of flow. The passage of the water through the filter is shown by the arrows, the entrance being through valve "A" and the outlet through "B." The oil and other impurities are caught by the toweling, the latter collecting upon the outside.

The condition of the filter is indicated by the resistance to flow, which in turn is registered outside the casing by pressure gauges, not shown in the cut, one being connected

(Continued on Page 332.)

"THERE'S A NEW PLUMBER IN TOWN!"

If You Heard This News How Would it Affect You?

By Ralph Duysters.

WHILE it may be true that competition is the life of trade, to some tradesmen, it means the time of their life. And that is why you are asked to stop a minute and think how the above news item would affect you.

In the merchandising field it oftens means a battle of prices. No doubt you are familiar with the story of the merchant who found, one morning, that the store next door had been rented by a competitor who was busily placing large signs in his windows and over the door the word *"Entrance"* was emblazoned in large letters. Our friend was stunned for a minute but quickly recovered his ready wit and the next morning, over his door could be seen a sign which read, *"Main Entrance,"* much to the consternation of the new arrival.

Altho this form of competition is not likely to confront the plumbing contractor, he is, nevertheless, continually faced with the possibility of a new man starting in and eventually getting his share of the business to be had. The affect competition of this kind would have on your business depends upon how firmly you are intrenched in your town. We heard a lot about lack of preparedness after the war broke out, but despite all this talk, we were less prepared for peace than we were for war. Thus do many of us hold to the belief that we are secure in our place and that tomorrow we will make our anchorage even firmer and then, too late, we wake to find we were too slow in getting started. Your reputation for reliability, fair dealing, service, etc., and your general standing in your community, will largely determine the extent of the inroad a new man can make in your business. Only if you have built up your business on purely a price basis, will figures count. The writer has always believed, and his investigations have served to bear out this belief, that prices in the plumbing field need not be cut in a reckless game of lowest bid gets the job.

While the same holds true in other fields, it is particularly applicable in the plumbing business, where skill and service are the greatest part of the contract. Regardless of the profit on the materials used, an adequate amount should always be added for service, or skill, or knowledge, or whatever you choose to call it when you call upon a lawyer or a doctor you have to pay a fee, often for mere words of advice. Some of us, at times, are inclined to think that it is easy money for them. But it isn't. It took them years to learn what they can impart to you in five mintues. It is so in the plumbing business. Through years of experience you have acquired knowledge upon which a fair value should be placed. Your function has not ceased when you have closed a sale. You hire competent men, who are paid accordingly, and the customer should be made to realize to what a large extent skill enters into the contract. Improper installation will make useless the finest fixtures in the world.

If the work you have done has been a credit to you, if every job you have installed has stood the test of use and time, your customers will stick pretty close. They will think a long while before the lure of a newcomer will have sufficient attractiveness to tear them away from a certainty to an uncertainty, who has little to recommend him except a lower price. It pays and pays big to build your business on a solid foundation that cannot be easily undermined. Take nothing for granted. Keep in mind the possibility of a new man coming in at any time, and strive to make a reputation for good work and fair dealing that will make your name a synonym for good plumbing and you'll never regret it.

The community, in which you have established your business, is probably growing and, it is hoped, you are growing with it. Ask yourself this question: "Where will I and my business be five years from today?" If you start now to evolve plans for the future of your business, there is no doubt but what it will increase as rapidly as the community grows. At the same time the determined-to-be-successful plumber will not wait for the community to grow. He will start right in to make things hum regardless.

On the other hand, we must not lose sight of the fact that the newcomer may not only have the right goods at the right price and ability equal to your own, but a knowledge of business building methods to be reckoned with. Sometimes, unless we are pressed, we are inclined to take things easy. We are liable to become self-satisfied. This is dangerous. While a plumber may be doing good work and making a reputation for himself among a small circle of people, his neglect to use modern publicity methods may mean the loss of much business that should be his. In other words, if you can build a better mouse trap than your neighbor, the world may make a beaten path to your door, but how are they going to do this, if they don't know where you are? If you are doing good work and giving satisfaction, why not advertise and tell others about it? Publicity and advertising are the two most valuable weapons of the newcomer. With the aid of these, regardless of his past efforts, he can gain a foothold. How firm this foothold will be and how permanent, depends upon how well he carries out his work after he gets it.

Every new enterprise is bound to get some business at the start. Most business men expect to lose a few customers due to dissatisfaction or perhaps a personal enmity. A new hotel will always draw people from an old one. A large banking house, in New York, will loan money only on hotels or apartment houses, which are newly erected and only for the first year. They figure the new building will attract people for the first year surely, after that they are not so certain. The man, who takes a long look ahead on the path of progress, is pretty certain to get what he goes after. A loud noise may attract a crowd of people for a few minutes but they will quickly disperse when the noise ceases. So, too, will the new plumber get a certain amount of business the moment his shingle is out. A newcomer usually makes headway, because he uses new methods, which bring him trade. If he uses these aggressively and legitimately, he is going to get the lion's share of the town's business sooner or later.

Thus the moral would seem to be: Not to wait for others to come and rouse you from your lethargy, but to bestir yourself now, before the newcomer and stimulator puts in an appearance. It may be too late afterward.

Heber Springs, Ark.—A. G. Lowe is opening a plumbing establishment here.

Cameron, Tex.—T. O. Tyson has opened a plumbing establishment in this town.

Circleville, O.—Clarence Angell has opened a plumbing business at 408 East Mound Street.

Pawtucket, R. I.—John J. Cronin has opened a plumbing and heating establishment at 56 Johnson Street.

Fairmont, W. Va.—Martin Plumbing Co. has been incorporated with a capital of $10,000. Walter E. Martin is at the head of the enterprise.

QUESTIONS & ANSWERS

SEVERAL WAYS OF SUPPLYING HOT WATER TO FACTORY AND MILL.

Editor "Domestic Engineering:"—The following solutions of the problem of obtaining an ample supply of hot water for factories will no doubt be of interest to many readers of "Questions and Answers."

In a certain factory that was run by motors supplied with current from a central station, hence lacked exhaust steam from an engine, hot water was wanted in several places. Steam lines and cold water pipes were run by the master plumber, who installed the outfit, and they were combined by means of ejectors, as illustrated in Fig. 1. Steam was admitted by valve 2, the water supply was controlled by valve 3, while 4 is the discharge valve leading to a line or hose. By manipulating 2 and 3, water of any desired temperature

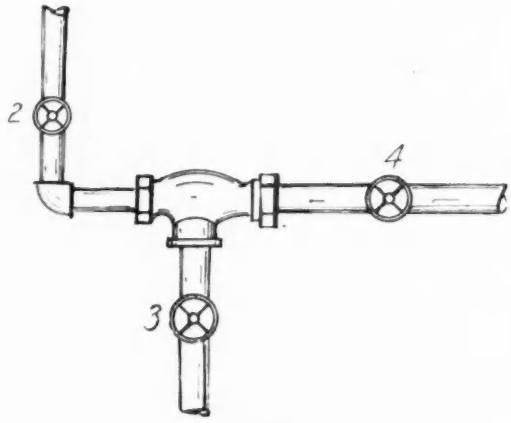


Fig. 1.

could be secured at 4, but more or less steam had to be admitted according to the temperature of the water coming to 3. When the operator desired to shut off the flow of hot water for a time, he would simply close 4, hence when he required a further supply of water, he would only have to open 4, and it would come the same as before it was shut-off.

This was satisfactory so far as the operator was concerned, but the engineer was not satisfied with it, for the following reason: The boiler was only a small affair, on which a light pressure was carried, and sometimes this was exceeded by the water pressure in the street mains. When 4 was closed under these conditions, water would rush up through 3 and 2 and flow back into the boiler, causing violent water hammer, and further reducing the steam pressure.

To overcome this objection, the ejectors were removed, and a regular exhaust steam feed water heater installed instead, as illustrated in Fig. 2. Steam at boiler pressure is delivered to the reducing valve 2, where it is lowered to about 5 pounds, and goes into the heater 3. Water resulting from the condensation of steam in the heating process, flows through 4 into the receiver 5 and is pumped back into the boiler. Cold water enters by 6 and after it is heated in 3, it flows through 7 to various faucets in the factory.

Steam from 2 is also used for other purposes, and 5 receives hot water from other devices, as neither of them was

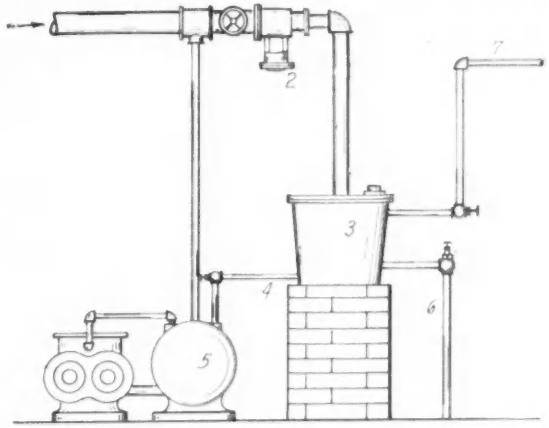


Fig. 2.

installed for the sole purpose mentioned, but that is another story.

In another plant, water to feed the boiler was heated by exhaust steam in the usual way, and a tee was connected

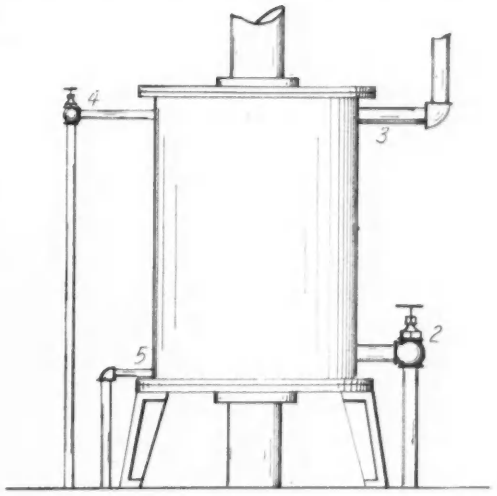


Fig. 3

into the feed pipe between the heater and the boiler, in order to draw out water for use in other parts of the building This was very unsatisfactory, because the engineer would have his pump set to feed the boiler, and somebody would draw off so much hot water that the remaining supply would

not be enough for the boiler hence there was danger of burning it.

A much better plan is illustrated in Fig. 3, which is a closed feed water heater fitted with two coils of brass pipe. The inlet for the boiler feed line appears at 2 with an outlet at 3, while 4 is the inlet to a coil of smaller pipe and 5

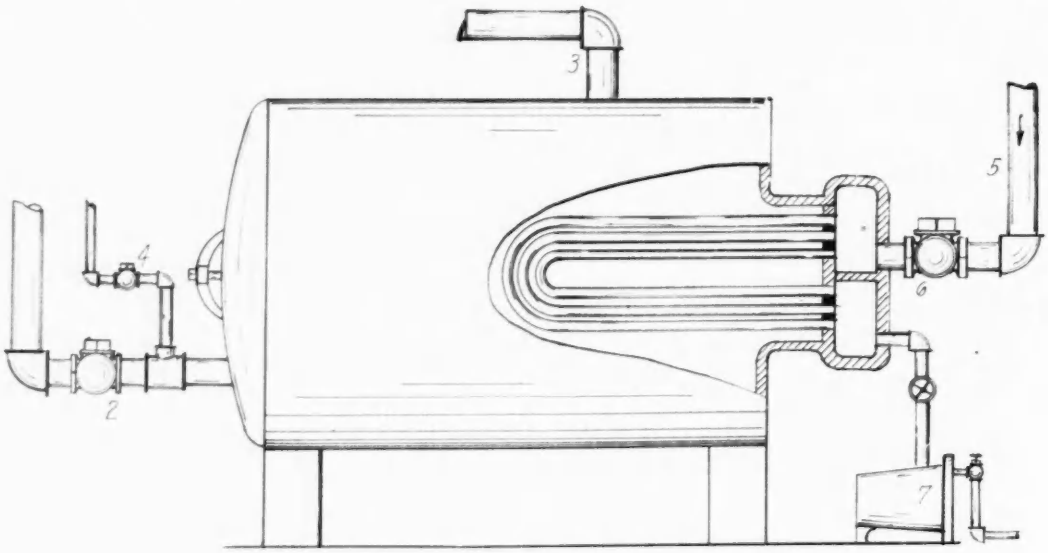


Fig. 4.

the outlet from the same. This provides an independent supply for the factory, hence it cannot affect the boiler feed.

Figure 4 illustrates another kind of heater located in a plant where water is supplied from street mains under light pressure. A duplex pump takes this water and doubles the pressure in order to make it effective on the top floors. It also maintains a steady pressure regardless of the amount used either inside or outside of the buildings.

A branch from the cold water line delivers water to the heater at 2, while hot water escapes at 3 and goes to shower baths, etc. A circulating pipe brings the partially cooled water and returns it at 4, thus providing hot water as soon as faucet is opened.

An elaborate system of thermostatic regulation was provided for admitting both exhaust and live steam, but the exhaust steam from this pump answers every purpose. It enters at 5 and passing through the check valve 6, goes through the return bends shown, which are in the body of water to be heated. As this steam is condensed, the resulting water goes to the trap 7 and is discharged into the return line, which carries it back to the engine room. This heater has a large storage capacity, the advantage of which is that, when once heated, it is not readily cooled. The disadvantage is that when once cooled, it is not readily heated.

New Haven, Conn. W. H. Wakeman.

MORE ABOUT THE INSTALLATION OF HOT WATER RADIATION.

Editor "Domestic Engineering":—I read with deep interest C. J. A.'s criticism of your sketches, which appeared in your publication May 10th, this year. I must voice my opinion.

First:—C. J. A. states that the procedure represented in your Fig. 2 is a short circuit. If such is the case, then every branch taken from the main is a short circuit. I do not think C. J. A. has any grounds for criticism on this point. His brief explanation of the expulsion of air in the system is ancient history to any pipe fitter.

Second:—He claims that it is not necessary to take the connection from the bottom of the main, as a side connection answers the same purpose and just as well. This is also a bad criticism, as it is bad policy to use a side outlet in this case, as a 45-degree ell and close nipple take up whatever expansion there is. I also think that the velocity of flow would be diminished, if taken directly from side outlet.

I also note that C. J. A. takes exception to flow and return connections being on the same end of the radiator. I would like to state that his point is a good point in certain cases, but does not apply to particular cases, which circumstances render different. I would like to ask C. J. A., if he has never seen radiators feeding and returning through the same outlet and working fairly well.

Furthermore, Fig. 3 does not express an unusual procedure, as asserted by C. J. A., but a procedure which is very much in use to overcome poor circulation on account of high mains. If C. J. A. understood more clearly what makes hot water circulate, he would not say that Fig. 3 expresses a fallacy.

I also take exception to the remark that M. A. N., of Erie, is not concerned with B. T. U. but U. P. E. I think if C. J. A. was more familiar with B. T. U., and did not rely so exclusively upon his little U. P. E., he would make a better critic. U. P. E. (Unit of Practical Experience), without B. T. U. (Better Technical Understanding) is worthless from the standpoint of criticism.

Atlantic City, N. J. J. G. G. Jr.

The above communication has reference to our answer to the inquiry of M. A. N., Erie, Pa., in our issue of May 10th, which answer was severely criticized by C. J. A., New York City, which criticism was published in our Questions and Answers Department, July 5th.

We are pleased to receive this comment on our answer to the original inquiry, as it covers exactly the several points in this answer, to which C. J. A. took exception.

A reference to the answer and comment, as published, will prove interesting and instructive, as by the interchange of ideas we acquire much knowledge.

Trade Extension Bureau

First Bulletin on Business Efficiency to be Issued Soon —Why the Questionnaire Asked Personal Questions

First Bulletin on Business Efficiency to be Issued Soon.

THE plumbing and heating contractor has signified his need of a standardized and efficient bookkeeping system. Of the eighty per cent of questionnaires received by The Trade Extension Bureau, the reply to the query, regarding the bookkeeping system employed, in fully fifty per cent states that the systems used are inadequate, in that they do not show the facts concerning the various phases of the business, while the remaining thirty per cent state that while their bookkeeping systems are satisfactory as a whole, they are suited to the special needs of the plumbing and heating trade.

With service uppermost in mind, The Trade Extension Bureau is preparing its standardized system for business records, a simplified but comprehensive bookkeeping system, which will adapt itself to every plumbing and heating shop in the country, from the small one-man business to the largest establishment.

The bookkeeping system, which will be published in the second bulletin, will form a complementary volume in the course of "Business Efficiency," the first volume of which is entitled "Computing the Fixed Operating Charge," and is now in the hands of the printers. It will be sent to the members of the associations during the present month.

This first bulletin dealing with the computation of overhead, or "fixed charge," is a complete business guide, taking every item of the plumbing and heating contractor's operating burden, analyzing it in its relation to the total volume of annual business, and establishing a guide for the small one-man shop as well as the business doing upwards of $200,000 a year gross, in its compilation of cost and profits.

The bulletin has been written in popular form, free from technicalities, which might tire those who care little about office routine. It is replete with interesting examples of business conduct in the average-sized shop, with one end in view—that of creating an ambition and setting forth the method, in which business and profits can be increased in a legitimate way.

In the circular accompanying the bulletin, The Trade Extension Bureau will place special emphasis on the preservation of each number so that the entire set can be used as a handy reference guide in the office of the plumbing and heating shop.

The chart, accompanying the bulletin, carries a blank column permitting the plumbing and heating contractor to list his own "fixed" charge for comparison with the standardized business approaching the volume of his own.

The tabulation of the various shops, used as examples in the chart, was greatly facilitated through the volunteering of information by a great many of the contractors in sending in their questionnaires covering this subject. Many of the shops not only answered the questions fully, as asked in the questionnaire, but subjoined more intimate information, which proved invaluable in compiling the bulletin chart and helpful in making short cuts to business efficiency, as actually employed in successfully conducted shops, available to the trade at large.

With such a spirit of co-operation so freely shown, there remains little doubt in the mind of the directors of The Trade Extension Movement that the era of uplift and progress for the entire trade will come through the efforts and the co-operative ties, which the bureau has made possible.

The bookkeeping system will go a step further than the first bulletin in showing what co-operation will accomplish. Hundreds of complete bookkeeping sets, together with job tickets, time slips, order blanks, estimate sheets and, in fact, all stationery from the letter-head to the most elaborate publicity and sales helps, used in the successful shops, have been sent to the bureau where they have been filed, and are being referred to in compiling the short and efficient methods of office conduct.

Questionnaires still reach the bureau's offices with every mail, and the tabulation of the answers has not yet been completed. All the states, with the exception of those of the South, are showing keen interest in the work of The Trade Extension Bureau and its mission of creating bigger and better business.

Why the Questionnaire Asked Personal Questions.

"Do your employes like their boss?"

"Entirely too personal!"

But everybody answered that question in The Trade Extension Bureau's circular, despite the fact that many deemed it an affront in being too personal.

The Trade Extension Bureau is personal. It intended all its questions to be personal. If it were one of those vague, impersonal institutions looked upon as a far-away object, instead of an intimate advisor, that question would not have been asked. But there was a reason for every query in the circular, no matter how personal or intimate it may seem, and the reason for the above question is to find out the general trend of the employment problem in the plumbing and heating trades.

The question might have been asked: "Do you consider your workmen an asset to your business or a burden?" After all, that is what the bureau wanted to ascertain, and if the plumbing and heating contractor holds his men to be mere underlings, working for a wage, *taking* instead of *giving* service, there lies the fault of failure, of disassociation instead of co-operation.

The Trade Extension Bureau, as it has been repeatedly set forth in the early programs and the more recent prospectus, is the clearing house for ideas, helpful business suggestions for the plumbing and heating trade. As such it is regarded by those who co-operate with it.

The following reply to the mooted question, given by a retired plumbing and heating contractor, who looks back on his years at the trade in a sort of fatherly, philosophical way, is the pith of the solution of the labor problem:

"We took all the trade papers, passed them on to the workmen and boys, who repaid us a thousand times because they were up-to-date on everything and needed less watching. Our people would fight for 'the boss.' We were always fair.

We cherished a cheerful, honest, home-like spirit in the shop and office. Those who came to change the shop-spirit, and they were many, were cautioned to get-in-step. When they did not, they 'walked the plank.'

"We allowed no cliques, played no favorites. We knew that we lived but once. We impressed that on our people. They were fair to us and honest. They realized as well as we did that an hour lost in life never returns; that every moment not lived well was worse than lost; that good living came first and plumbing came as a second consideration."

Such a policy forms a rock-base for successful business careers in the plumbing and heating trade. It is such replies that help make the future work of The Trade Extension Bureau a co-operative, educational movement, in which every one gives the best of his experience toward bettering the standards of business in the entire craft.

To foster the co-operative spirit in the craft was the aim of the questionnaire. The service of the Bureau is not to be for the contractor alone, it is to go further than that in so far as it will reach every employe individually.

The names of the office assistants were asked, not as one of the contractors thought, "to steal them away by offering them better jobs somewhere else," but to address to them individual bulletins on bookkeeping, business management, sales letters, window trimming, advertising copy, helpful business hints that will make them more valuable to "the boss" instead of taking them away.

It is logical to believe that a service bulletin addressed to the bookkeeper, telling him of advanced methods of keeping the accounts of his firm, will be more thoroughly read and studied by him than if this same bulletin were handed him by his employer, probably without an explanation, or with the usual: "Here, look this over."

Employes are interested in the business. This is fully illustrated by the letter of a bookkeeper of a plumbing and heating firm, written to The Trade Extension Bureau.

The writer says:

"The 'boss' threw your questionnaire in the waste basket. I am filling it out, nevertheless, because I feel sure it will prove the key to information, which we need in making our business a success. He is long on the mechanical end of the game, but overlooks entirely the possibilities of bigger business for himself by devoting more time and study to office management. I intend some day to get into the game myself, not as a mechanic, but as the proprietor of an up-to-date plumbing and heating shop."

He may seem a little selfish, but while this bookkeeper will be training himself for the future when he will open a shop, probably in competition with his "boss," he will be giving his employer better service because he will endeavor to put into operation those fixed principles of better management, which The Trade Extension Bureau will instil, through its service of business education.

Not all bookkeepers may be as ambitious as the one whose letter is on file at the Bureau's offices, but every man, if he is worth having as an employe in a trusted position, is ambitious to make good.

The contractor, whose bookkeeper took it upon himself to answer the questionnaire, would do well to take his employe into his business as a partner, for he certainly shows the marks of success in his make-up.

The Trade Extension Bureau is personal, personal in service, and nothing will be left undone to make that service the stepping stone to Bigger and Better Business.

If you failed to receive the questionnaire and the literature of The Trade Extension Bureau send in your name and address to the Bureau:

National Trade Extension Bureau,
Mercantile Bank Building,
Evansville, Ind.

The mailing list of The Trade Extension Bureau is not as complete as it should be. Quite a number of letters have been returned to the Bureau as undeliverable because of incorrect address, although the addresses correspond with those given in the various directories.

Sending out circulars and letters and having them returned is the poorest kind of business. It's wasting the time and money of The Trade Extension Bureau and disappointing the plumbing and heating contractors who do not receive the literature intended for them.

Secretaries of state associations have been urgently appealed to, to send corrected lists of their organizations for the use of the Bureau. A few have not yet responded.

Officers of the state associations must be relied upon to give the general service to the Bureau. Unless they cooperate, they are not serving the best interest of the members of the organizations they represent.

MORNING EXERCISES FOR THE TIRED BUSINESS MAN.

Paul Blatchford, secretary of the Central Supply Association, is mailing to friends in the trade suggestions, printed on a card, for morning exercises for the tired business man. They are as follows:

"Rise 7 a. m.

"Stand in the middle of room, raise arms slowly overhead, take deep breath and say 'Dam the Government,' lowering arms in attitude of despair. Ten times.

"Extend body flat downward on floor, cover eyes with hands, kick heels, think of the railroads and weep till dry.

"Kneel, wring hands, meditate upon labor troubles and groan 150 times.

"Assume sitting position, hands on hips, sway gently to and fro and concentrate on Mr. Burleson until a generous frothing of the mouth sets in. Till exhausted.

"Collapse on floor. Grovel vigorously, think of the income tax and gnash teeth as in anger. Ad lib.

"Note:—Observe this simple regimen every morning before breakfast and you will reach the office with most of the cares and troubles of the day already out of your system."

According to Bradstreet's monthly average of 106 commodities in American market, made public August 7th, the highest point reached by the high cost of living since 1914, was on August 1st.

The "New York American" states that at an estimated cost of $50,000,000 the New York Telephone Co. will begin the installation of an automatic call system in place of switchboard method now in use.

It is announced that a unique feature of the Industrial Congress, held at Calgary, Alberta, Canada, from August 11th to 16th, was its perambulating character. While the main sessions were held at Calgary, delegates were taken on tours of the province. The purpose of the Congress was to lay foundations of a broader relationship between the people of the United States and Canada.

Complete statistics of iron-ore mining in 1918, compiled under direction of E. F. Burchard, United States Geological Survey, show decrease in output and in shipment, but an increase in value. Iron ore mined in the United States in 1918, exclusive of that containing 5 per cent or more of manganese, amounted to 69,658,278 gross tons, compared with 75,288,851 tons in 1917. Average selling value of ore per gross ton at mines was $3.39, compared with $3.15 in 1917.

Fifty Dollars for Actual Experiences in Selling Farmers

Domestic Engineering offers Fifty Dollars to plumbing and heating contractors who will write, telling their actual experiences in selling to farmers.

For what is considered the most notable achievement, as proven by facts and figures, we will offer a first prize of $25.

The second prize will be $15, and third prize $10.

Here's the way to go about winning a prize.

Tell us how you have succeeded in developing business in farming communities by giving us figures on what your business used to be and what it is now.

Tell us how your pump sales have increased and how many you have sold.

Tell us what you have done in the sale of bathroom and kitchen fixtures.

Tell us to what extent you have sold modern heating apparatus.

Tell us what success you have had selling electric lighting plants.

Don't overlook including figures on other things. This may help you win.

Domestic Engineering Farm Number

The above information will be published in the Farm Number of ***Domestic Engineering***, to be published September 6th—with or without your name, whichever you prefer.

It isn't necessary that you should write at length. Present your facts and figures briefly—showing how you have taken advantage of your opportunities by demonstrating your increased sales.

Your books should show this, and such information embodied in a letter is all that is necessary.

Your letter should reach ***Domestic Engineering*** no later than August 30th.

A MESSAGE *to the* MASTER PLUMBERS *of the* UNITED STATES

By President Frank B. Lasette, of the National Association of Master Plumbers of the United States

Frank B. Lasette.

IN Atlantic City, N. J., on June 17th, 18th and 19th was held the thirty-seventh annual convention of the National Association of Master Plumbers of the United States. This means that thirty-seven consecutive annual gatherings of one of the largest and greatest organizations of its kind in the country, if not in the world, have been held. Great, not so much because of the strong personnel of the men and firms constituting its membership, important as that may be, but because of the many achievements to its credit, which have proved of so much benefit to mankind, not the least those in behalf of modern sanitation.

Though the National Association of Master Plumbers had its origin in efforts made by leading members of the trade in New York, during the latter part of 1882, still the organization was not definitely undertaken until June 28 and 29, 1883, at which time 125 master plumbers, representing 21 leading cities of the United States, assembled in the first convention in New York City, thus launching in a small way an organization which has grown to considerable proportions in the years that followed, until today it stands a proud monument to the memory of its farseeing founders, and, as always, dedicated to the service of the public good. Indeed, may it not be said: "They builded better than they knew."

An organization built up by men is bound, like its progenitors, to be subject to frailities and errors—mistakes of judgment, rather than intent; so, if our association has at times erred, and suffered because of its errors, at no time, be it said to its eternal fame, has it swayed from its original purposes, or aims, which, in the main, have been to unite the trade of the country for the further development of its noble calling, and to encourage inventions and improvements in sanitary appliances, and foster national and state legislation for the furtherance of sanitary laws.

How well the fathers of the Association figured, and how well it has succeeded in the accomplishment of its aims and ideals, let present-day sanitary plumbing appliances and installation mutely testify.

It is no mere coincidence that what is now characterized as modern sanitary plumbing practice has practically developed within the lifetime of the National Association of Master Plumbers—an impressive, irrefutable and lasting testimonial to the crusade begun some thirty odd years ago by the Association to abolish, if possible, and for all time, intolerable insanitary conditions and practices, then altogether too prevalent.

This alone, and of itself, is sufficient reason for the existence of our great organization, if it never accomplished anything more; but the end is not yet. It has a formidable task before it, for sanitation is only in its infancy, and its further progress will continue to need the peculiar expert service, which only master plumbers are capable of rendering, and which may be had for the asking.

Therefore, our Association must not only continue to live, but it must continue to grow in numbers and influence, if the task, so well begun and ever before us, is to be properly met and successfully accomplished. We must not, we cannot be content, nor should we rest, until every state, city, town and village in the land is thoroughly organized, that its influence for good may extend everywhere and be felt wherever human habitations exist.

Every master plumber should feel obligated to affiliate with his brothers of the trade for a participation in the work which lies before us; and for the improvement of conditions in his immediate vicinity. Many heads and hands, united for a common purpose, can accomplish more—and in less time—than can be done individually and without co-operation.

The recent National Convention intrusted me with the custody of the Association for the ensuing year. In accepting the office of president, I did so with full cognizance of the responsibilities involved. I know thoroughly the importance of our calling as regards the health and comfort of humanity, and I am sure every other master plumber does. Ours is a great responsibility, especially now during the reconstruction period of a sad and torn world. Even now, efforts are underway to underrate the importance of certain sanitary regulations, on the sole plea of economy, regulations, which required our united efforts for years back to have placed on the statute books of our cities. The matter of public health does not appear to figure in this dangerous attempt at false economy. Only plumbers understand plumbing; it is their problem and their work, so, it is their imperative duty to rally to the rescue of the public and prevent every attempt to discard sanitary regulations governing plumbing installation. Here is where organization can accomplish something, and this is but one of the opportunities, which such a body is offered, from time to time.

My first message, therefore, is addressed to the master plumbers generally, members and non-members, but in particular to the latter, as many of them have probably given no thought to the subject of organization, its need and its benefits. And there are undoubtedly many who fail to see any benefits in membership. To all such, I can only say that your duty is plain. As master plumbers, we have a responsibilty second to none to perform, and we cannot accomplish it save by a hearty and general co-operation. We are living in a new age—the age of team work. By himself alone, man, in any walk of life, can hope to accomplish but little, or nothing. In union there is not only strength, but assured progress. Co-operation is one of the eternal laws of nature, as broad and unchangeable as the universe itself.

Man is just awakening to the existence of this immutable law and is beginning to adjust himself to its changeless demands.

The members of the National Association of Master Plumbers have long realized this truth. May we not hope that the non-members of our important craft may soon see the light—and their duty—and decide to affiliate with us. Our latch string is always within convenient reach, and a hearty welcome is assured every applicant. Application for membership should be made to local or state associations where such exist, or otherwise, to the National Association direct. May we not be favored with a response from every non-member of the craft, whose eyes fall upon this message.

PRESIDENT FRANK B. LASETTE ANNOUNCES HIS CABINET.

Directors and Committees Appointed for 1919-1920, by Frank B. Lasette, President of the National Association of Master Plumbers.

President Frank B. Lasette, of the National Association of Master Plumbers, announces from headquarters, 2255 Broadway, New York City, the names of prominent men in the plumbing field who will constitute his cabinet. A perusal of the list will gratify every member of the organization because the selections made by Mr. Lasette are men of high caliber, all of whom have the interests of the trade at heart and have proven their loyalty by their many years of hard work. At a time when the trade is entering a new era, there is added encouragement in knowing that the men who will direct the policies of the association are experienced and capable of doing a great deal for the welfare of the industry.

The board of directors and standing committees are as follows:

Directors.

Jos. W. Cannon, Chicago.
E. W. Cox, Boston, Mass.
Harry L. Hanson, Butte, Mont.
W. W. Hughes, Minneapolis, Minn.
John S. Irvine, Detroit, Mich.
Frank J. Klimm, San Francisco, Calif.
James W. Pate, Birmingham, Ala.
George E. Smith, Denver, Colo.
S. M. Stevens, Asheville, N. C.
Samuel F. Wilson, Newark, N. J.

Trade Extension Bureau.

Frank B. Lasette, President, New York City.
D. F. Durkin, Jr., Philadelphia.
William F. Finnigan, Portland, Ore.
William J. Flynn, New York City.
E. D. Hornbrook, Kansas City, Mo.
D. H. Roberts, Cleveland, O.

Educational Committee.

William A. Bradford, Chairman, Quincy, Mass.
H. F. Baillet, Irvington, N. J.
H. A. Bareham, Rochester, N. Y.
James H. Doody, Albany, N. Y.
Robert H. Pflug-Felder, Philadelphia.
F. E. Wheeler, Woodfords, Me.
Charles W. Wilson, Youngstown, O.

Essay Committee.

J. C. Bixby, Chairman, Omaha, Nebr.
N. J. Kennedy, Lawrence Kan.
J. J. Loughlin, Chicago.
W. C. McCarten, Marshalltown, Iowa.
H. B. McClure, Harrisburg, Pa.

Standardization Committee.

James E. Baggot, Chairman, Chicago.
George H. Drake, Buffalo, N. Y.
John H. Keane, Pittsburgh, Pa.
R. T. Rock, Bridgeport, Conn.
Frederick A. Wilson, San Francisco, Calif.

Reconstruction Committee.

Jos. W. Cannon, Chairman, Chicago.
Thomas E. O'Brien, Brooklyn, N. Y.
James H. Pinkerton, San Francisco, Calif.

Conference Committee.

George F. Uber, Chairman, Philadelphia.
J. H. Jasper, New York City.
Richard Turner, Wilkes-Barre, Pa.

Obituary

William H. Hare.

William H. Hare, founder and president of the William H. Hare Plumbing Co., of Wheeling, W. Va., died at his home in that city on July 23rd, in his 47th year. Mr. Hare, who had been a member of the city council for several terms, had been in poor health for some time. He was a highly esteemed member of the Wheeling Master Plumbers' Association and took an active interest in its affairs.

John B. Cavvichi.

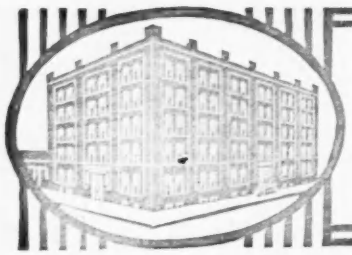
John B. Cavvichi, for many years engaged in the heating business at 82 North Street, Boston, Mass., died at his home in East Boston on August 1st, after an illness of three months. Mr. Cavvichi was born in Italy 53 years ago and came to this country when a young man. In his business career he had equipped some of Boston's largest buildings. A widow, four sons and three daughters survive him.

L. J. Nelson.

L. J. Nelson, president of the Gem Plumbing Co., of Atlanta, Ga., died at his home in that city on Thursday, August 7th, after having been in poor health for several years. Mr. Nelson has been engaged in the plumbing and heating business in Atlanta since 1904, and with the late A. J. Mendenhall had built up a splendid business. He was a past president of the Atlanta Master Plumbers' Association, having served this organization two terms and leaving its affairs in better shape than they had been for years.

Thomas P. Cleary.

Thomas P. Cleary, proprietor of the plumbing firm of Jordan & Cleary, New London, Conn., died at his home in that city on August 2nd, in his 49th year, after an illness of four days. Mr. Cleary had been in poor health for about a year following a shock, but had been able to attend to business as usual. About two weeks ago his automobile was struck by a freight train, and while Mr. Cleary was not injured, it is thought that the shock unnerved him and brought on a nervous collapse, which resulted in his death. Mr. Cleary had lived the greater part of his life in New London. He learned the plumber's trade when a young man, and, after working at it a few years, formed a partnership with Joseph V. Jordan to conduct a plumbing, heating and tinsmith business. They built up a big business and about ten years ago dissolved partnership, Mr. Jordan opening an establishment of his own, and Mr. Cleary continuing the old business under the old firm name.



Among the Wholesalers and Manufacturers

COMPANIES RECENTLY INCORPORATED.

The Hunter Heating Co., of 510 Equitable Building, Baltimore, Md., has been incorporated with a capital of $50,000, to manufacture heating goods. The incorporators are: Albert C. Putts, William Ewin Bonn and Robert S. Mooney.

The Royal Midget Automatic Heater Co., of Wilmington, O., has been organized to manufacture instantaneous hot water heaters. K. H. Grantham is at the head of the enterprise.

The Milwaukee Manufacturing Co., of Milwaukee, Wis., has been incorporated with a capital of $200,000, to manufacture instantaneous hot water heaters. The incorporators are: Edwin W. Strauss, Louis J. Schneider and Max J. Leutermann.

The Suburban Supply Co., of Newark, N. J., has been incorporated with a capital of $100,000, to deal in plumbing supplies.

The Merchant Plumbers' Supply Co., of San Antonio, Tex., has been incorporated with a capital of $34,000. The incorporators are: G. C. Reywald, R. G. Thomas and A. Collmann.

The State Supply Co., of Boston, Mass., has been incorporated with a capital of $50,000, to deal in plumbing supplies. The incorporators are: George W. Ravin, of Winthrop, Mass.; Harry Blacklow, of Roxbury, Mass.; Samuel M. Harris, of Brighton, Mass.; Samuel L. Karp, of Chelsea, and Louis Ravin, of Lynn, Mass.

HAS IMPROVED AND ENLARGED ITS PLANT.

The Rider-Ericsson Engine Co., of Walden, N. Y., has been improving and enlarging its plants at that place. All machinery throughout its factories will hereafter be run by electricity.

AMERICAN RADIATOR CO. DECLARES DIVIDEND.

The American Radiator Co., of Chicago, has declared a quarterly dividend of 4 per cent on the common, payable September 30th, and 1¾ per cent on the preferred stock, payable August 15th.

THE DEATH OF JOHN G. MURDOCK, SR.

John G. Murdock, Sr., founder and formerly president of the Murdock Manufacturing & Supply Co., of Cincinnati, O., died last week at his home in Price Hill, a suburb of that city, in his 86th year. Mr. Murdock had been connected with the plumbing industry for more than half a century and he was the inventor of several sanitary devices. He retired from active business several years ago. Mr. Murdock was for more than twenty-five years very active in welfare and community work at Price Hill. One son and two daughters survive him.

NATIONAL DISTRICT HEATING ASSOCIATION APPOINTS RESEARCH COMMITTEE.

A Heating Research Committee has just been established by the National District Heating Association, President J. C. Hobbs having appointed the following members to act for the ensuing year: James A. Donnelly, New York, chairman; E. S. Schultz, Chicago; H. T. Luscomb, New York; A. R. Heath, New York, and O. C. Montgomery, New York.

OPENS BRANCH OFFICE OF PROMOTION DEPARTMENT.

Standard Sanitary Mfg. Co., of Pittsburgh, Pa., has opened a branch office of its promotion department in the Third National Bank Building, Springfield, Mass. This office will be conducted in conjunction with the company's Boston office, but will be under direct supervision of Edmund Henry.

M. P. BERGLAS CALLED BY DEATH.

M. P. Berglas, president of the M. P. Berglas Mfg. Co., of Brooklyn, N. Y., died at his home in that city on Thursday, July 31st. Mr. Berglas was a man of marked ability and sterling qualities, and his untimely death is felt keenly by a host of personal and business friends. He was born in Austria and came to the United States several decades ago. Being enterprising he soon engaged in the manufacture of woodwork, where his industry and sound judgment brought him success to such an extent that he established plants both at Brooklyn and in Norwich, N. Y. Mr. Berglas was active in the direction of the affairs of a number of important business organizations in Brooklyn and New York. His wife, five sons and two daughters survive him.

WESTERN TRADE GOLF ASSOCIATION PLAYS AT RIDGEMOOR.

A new course was negotiated by the Western Trade Golf Association on Thursday, August 7th, when the members held their regular monthly tournament at the Ridgemoor Golf Club, of Chicago. Thirty-three members turned out for the qualifying round, and eight foursomes and a five-some participated in the afternoon match. The course was in good condition and scores were lower than usual, owing to the ground being hard and dry. The members found the arrangements all that could be desired, and a very enjoyable day was spent.

J. M. McDonald and L. R. Taylor were the stars of the morning and afternoon, with gross cards of 41 for the first nine, and 89 and 90 respectively, at the later session. C. A. Morrow with an 87, and a 90 by President C. D. Little, were among the good afternoon scores. C. H. Bishop, aided by a liberal handicap, won the Association Cup with 95-28-67. Charley LaFleur won the Duffer's Cup with a score

of 146-30-116, and D. M. Forgan won the Guest's Prize. The flight winners and runners-up, in the order of flights, were as follows: L. R. Taylor and C. D. Little; R. M. Stackhouse and J. M. McDonald; A. J. Ewing and Roy Andrews; C. R. Elliott (no runner-up in fourth flight); H. M. Hart and Paul Blatchford; Peter Munn and A. S. Lindeblad; D. E. McCabe and M. J. Czarniecki; C. C. Stringer and R. Flinder; C. S. Pitkin and H. W. Evans

President C. D. Little presided at the business session and gave prizes to the winners. He announced the conditions under which various trophies will be competed for. The present practice of giving prize-winners certificates for merchandise, instead of prizes was voted upon and sustained. "Dick" Evans, of the National Tube Co., was elected a member and the application of Frank Kaulback, proposed by J. R. Carroll, was referred to the Board of Directors.

A fine day came to a close when E. W. Sanborn moved that a vote of thanks be given to the club for the courtesies of the day, which was heartily seconded and carried.

Qualifying Round.

E. W. Sanborn	47	L. R. Taylor	41
Chas. LaFleur	71	C. A. Morrow	44
Peter Munn	59	J. P. Dugger	52
A. S. Lindeblad	63	M. J. Czarniecki	50
Wm. Devine	65	D. E. McCabe	50
C. R. Elliott	57	G. J. Meyer	61
E. Buehler	50	T. J. Cusack	62
Paul Blatchford	51	D. M. Forgan	48
C. D. Little	50	H. M. Hart	52
R. S. Musser	51	R. M. Stackhouse	49
H. E. Treadway	49	J. Hammond	47
J. M. McDonald	41	L. C. Huckins	64
Bruce Fulton	62	H. W. Evans	55
F. K. Dibley	53	C. S. Pitkin	57
J. R. Andrews	46	C. H. Bishop	49
N. H. Blatchford	55	J. W. Story	64
A. J. Ewing	48		

Afternoon Play, By Flights.

	Gross	Handicap	Net
L. R. Taylor	90	14	76
C. A. Morrow	87	9	78
C. D. Little	90	20	70
E. Buehler	98	16	82
R. M. Stackhouse	98	20	78
J. Hammond	107	18	89
D. M. Forgan	95	11	84
J. M. McDonald	89	3	86
J. R. Carroll	98	18	80
A. J. Ewing	95	18	77
R. Andrews	97	20	77
L. C. Huckins	103	20	83
E. W. Sanborn	97	20	77
C. R. Elliott	98	19	79
R. S. Musser	98	7	91
H. E. Treadway	94	6	88
H. M. Hart	106	29	77
E. J. Claffey	110	25	85
J. P. Dugger	109	25	84
Paul Blatchford	104	22	82
Chas. LaFleur	146	30	116
Peter Munn	130	30	100
A. S. Lindeblad	125	30	95
Wm. Devine	139	30	109
D. E. McCabe	99	21	78
N. H. Blatchford	114	22	92
C. H. Bishop	95	28	67
M. J. Czarniecki	100	30	70
C. C. Stringer	116	30	86
Bruce Fulton	108	29	79
R. Flinder	101	28	73
F. K. Dibley	108	29	79
T. J. Cusack	109	30	79
G. J. Meyer	122	30	92
H. W. Evans	105	30	75
C. S. Pitkin	104	30	74
J. W. Story	124	30	94

EASTERN TRADE GOLF ASSOCIATION HOLDS MIDSUMMER MEET.

The midsummer tournament of the Eastern Trade Golf Association was held on the links of the Belleclaire Golf and Country Club at Bayside, Long Island, on Thursday, August 7th.

The course was a new one to most of the members, and a difficult one. No one succeeded in making a low score, Captain Garfield turning in a gross 86 as the best of the day, but a thorough enjoyment of the outing was had by all.

There were thirty-five players on hand to make the two rounds of the course, though a number of the afternoon foursome cards were not turned in.

L. H. Quackenboss, who was host of the day, led the gallery.

Following the afternoon round the usual social gathering round the dinner table ensued and President Frank K. Chew presented for the consideration of the members a telegraphed offer of the Western Trade Golf Association,

A. M. McCormack, L. H. Quackenboss and H. Romeyn Smith, at Eastern Trade Golf Association's Midsummer Meeting.—From "Domestic Engineering" Photo.

offering a challenge for the season's championship on the twenty best scores made that day by both associations. This was rejected as its eleventh hour receipt did not provide time for mature consideration, and the members were in favor of adhering to the basis of last year's match. However, terms for the match will undoubtedly be arranged in time for the fall meet, which will be held at the Forest Hill Golf Club at Newark, N. J.

Frank Keenan, the Bayonne champion, took first prize in the medal play, with a 100 gross and 70 net. This consisted of a handsome thermos pitcher and drinking glass set presented by C. S. Wood.

As second prize, S. J. Cutting took a Tiffany traveling clock, presented by W. F. Broatch, of the U. S. Sanitary Mfg. Co.

C. A. Geoghegan won third prize and received a golf bag and clubs, presented by W. A. Burtenshaw, of the John Simmons Co.

W. F. Johnson for fourth prize received a set of platinum cuff links, presented by James S. Weaver, of Central Tube Co.

E. T. Strickland took a Red Cross medal as fifth prize.

Golf balls offered for the foursome winners were taken by J. C. McDonald, in the first winning team, and L. S. Rothwell, who figured with the third lowest score.

E. L. Strickland, who teamed with McDonald; Keenan and Cutting, who made second best score, and W. F. Johnson, who teamed with Rothwell for third place, had each won

a handicap prize and were therefore barred from the foursome offerings.

Morning Round—18-Hole Medal Play.

	Gross	Handicap	Net
G. E. Keenan	100	30	70
S. J. Cutting	99	28	71
C. A. Geoghegan	110	34	76
W. F. Johnson	92	15	77
E. L. Strickland	94	17	77
P. H. Seward	96	18	78
H. S. Maddock	100	22	78
L. S. Rothwell	94	14	80
A. H. Ross	107	27	80
G. M. Scott	101	20	81
W. W. Weller	103	22	81
Steve Roberts	88	6	82
J. Barnum	115	33	82
J. C. McDonald	102	20	82
F. W. Broatch	93	10	83
B. Reeves	98	15	83
J. G. Geoghegan	105	22	83
P. J. Faherty	119	36	83

P. Cochran, L. A. Kelly, B. Reeves and W. A. Burtenshaw, at Eastern Trade Golf Association's Midsummer Meeting.—From "Domestic Engineering" Photo.

W. H. Staples	102	18	84
J. S. Weaver	104	20	84
J. J. Blackmore	105	20	85
J. B. Garfield	86	0	86
M. Readey	101	15	86
Frank K. Chew	120	34	86
S. L. Greason	122	36	86
J. I. Simmons	88	0	88
W. H. Burnett	100	12	88
L. A. Kelly	101	12	89
P. Cochran	117	24	93
W. T. Gilmour	104	10	94
L. O'Neil	119	25	94
W. S. Ross	117	20	97
B. W. Bennett	115	17	98
W. A. Burtenshaw	133	30	103
C. G. Fundinger	140	36	104

Afternoon Round—Best Ball Foursome.

	Gross	Handicap	Net
E. L. Strickland, J. C. McDonald	86	12	74
G. E. Keenan, S. J. Cutting	94	19	75
W. F. Johnson, L. S. Rothwell	89	9	80
W. H. Burnett, H. S. Maddock	90	8	82
J. G. Simmons, J. B. Garfield	83	0	83
Steve Roberts, J. J. Blackmore	87	4	83
W. H. Staples, G. M. Scott	97	12	85
B. Reeves, L. A. Kelly	94	8	86
A. H. Ross, B. W. Bennett	98	12	86
Frank C. Jennings, J. B. Garfield	87	0	87
F. W. Broatch, W. T. Gilmour	94	7	87
P. J. Faherty, F. K. Chew	110	23	87
W. W. Weller, M. Readey	100	10	90
W. A. Burtenshaw, P. Cochran	112	18	94

Danville, Va.—The Sanitary Heating & Ventilating Co. has been incorporated with a capital of $20,000. The officers of the company are: W. F. Cox, president; M. Ross Watson, vice-president; and T. C. Guerrant, secretary.

CENTRAL SUPPLY CO., OF MINNEAPOLIS, DOES BIG ADVERTISING ON TWENTY-FIRST ANNIVERSARY.

The Central Supply Co. of Minneapolis celebrated its twenty-first anniversary by running a ten-page advertisement in "The Daily News," of that city. Under the title, "Twenty-one Years of Progress," the front page showed a view of the plant and the founder and president, P. J. Frey. Page three told of the success of the company and the principles on which it was built and presented interesting information on the personnel of the organization, etc. More than a score of advertisements showed the products of manufacturers of various well-known plumbing and heating materials and equipment. Views of the company's showrooms and machine shops were featured on the last page.

BUILDING PERMITS FOR JULY.

July activity closely parallels June activity, as indicated by comparing building permit statistics for the two months. Reports from 145 cities to "The American Contractor" for July give a total estimated valuation of $130,746,609, an average of approximately $900,000 per city. June totals from 158 cities indicated a $134,726,715 valuation, or slightly less than $900,000 per city ($885,270).

Increases over June activity exist in 83 cities; recession in 58 cities.

The average value of permits for July is $3,760, as compared to an average value of $3,375 for June, $2,600 in May, and $1,700 in January. This would indicate that less of the July work is for repairs.

Gain in activity over 1918 is practically universal, only 7 cities out of 145 reporting less amount of estimated value.

City	July, 1919 Estimated Cost	July, 1918 Estimated Cost	Per cent Gain	Per cent Loss
Akron, Ohio	$ 4,243,407	$ 432,715	880	.....
Albany, N. Y.	370,905	100,755	268	.....
Allentown, Pa.	373,544	51,300	628	.....
Atlanta, Ga.	1,534,338	439,068	249	.....
Atlantic City, N. J.	421,127	28,500	1377	.....
Auburn, N. Y.	10,735	26,055	.....	58
Augusta, Ga.	166,820	43,339	284	.....
Baltimore, Md.	2,876,170	364,590	688	.....
Bayonne, N. J.	555,025	56,300	885	.....
Berkeley, Cal.	139,879	61,400	127	.....
Binghamton, N. Y.	190,840	159,613	19	.....
Birmingham, Ala.	610,278	81,851	645	.....
Boise, Idaho	982,570	16,300	5928	.....
Boston, Mass.	2,243,461	669,250	235	.....
Bridgeport, Conn.	459,510	320,526	43	.....
Brockton, Mass.	92,997	21,355	335	.....
Buffalo, N. Y.	1,458,000	972,000	50	.....
Butte, Mont.	84,000	42,000	100	.....
Cambridge, Mass.	496,640	1,176,023	.....	57
Camden, N. J.	565,085	95,025	494	.....
Canton, Ohio	793,885	115,612	586	.....
Cedar Rapids, Iowa	424,000	141,000	200	.....
Charleston, S. C.	247,550	29,950	726	.....
Chattanooga, Tenn.	132,821	106,601	24	.....
Chelsea, Mass.	68,325	19,750	246	.....
Chicago, Ill.	7,714,700	4,885,600	57	.....
Cincinnati, Ohio	1,562,890	395,748	294	.....
Cleveland, Ohio	5,165,075	1,382,400	273	.....
Columbus, Ohio	658,710	129,905	407	.....
Covington, Ky.	35,730	2,150	1096	.....
Dallas, Texas	2,228,810	94,854	2249	.....
Davenport, Iowa	384,278	99,887	284	.....
Dayton, Ohio	1,084,345	324,269	234	.....
Decatur, Ill.	239,675	76,335	213	.....
Denver, Colo.	966,100	388,700	148	.....
Des Moines, Iowa	698,350	602,858	15	.....
Detroit, Mich.	8,079,965	2,332,380	246	.....
Dubuque, Iowa	168,394	6,720	2405	.....
Duluth, Minn.	533,245	283,190	88	.....
Easton, Pa.	80,383	20,342	295	.....

City	July, 1919 Estimated Cost	July, 1918 Estimated Cost	Per cent Gain	Per cent Loss
East Orange, N. JJ	416,137	196,248	112	.....
East St. Louis, Ill.	309,478	170,825	81	.....
Elizabeth, N. J.	392,158	54,787	615	.....
El Paso, Texas	236,170	45,224	422	.....
Erie, Pa.	299,923	206,903	44	.....
Fall River, Mass.	201,874	131,930	53	.....
Fitchburg, Mass.	97,295	8,377	1061	.....
Fort Worth, Texas	2,047,995	198,180	933	.....
Galveston, Texas	47,962	14,761	224	.....
Grand Rapids, Mich.	285,418	109,692	160	.....
Hamilton, Ohio	187,959	136,380	37	.....
Harrisburg, Pa.	428,035	22,485	1803	.....
Haverhill, Mass.	130,000	1,750	7328	.....
Holyoke, Mass.	244,965	11,050	2116	.....
Houston, Texas	677,803	247,134	174	.....
Indianapolis, Ind	1,746,357	651,808	167	.....
Jackson, Mich.	320,294	19,225	1566	.....
Jacksonville, Fla.	265,769	129,878	104	.....
Kansas City, Kan.	101,923	36,975	175	.....
Kansas City, Mo.	1,521,950	245,650	519	.....
Lancaster, Pa.	111,675	10,650	948	.....
Lansing, Mich.	349,975	5,150	6695	.....
Lawrence, Mass.	277,215	133,460	107	.....
Lexington, Ky.	108,150	8,435	1182	.....
Lincoln, Neb.	141,366	63,360	123	.....
Little Rock, Ark.	282,216	79,260	256	.....
Louisville, Ky.	438,215	207,775	110	.....
Lowell, Mass.	240,315	30,745	681	.....
Lynn, Mass.	135,910	17,945	657	.....
Manchester, N. H.	241,842	50,655	377	.....
McKeesport, Pa.	97,405	.....	.....	.....
Memphis, Tenn.	808,150	42,204	1814	.....
Milwaukee, Wis.	1,309,705	516,532	153	.....
Minneapolis, Minn.	$ 2,163,220	$ 1,118,000	93	.....
Mt. Vernon, N. Y.	264,460	48,550	444	.....
Nashville, Tenn.	212,707	52,520	305	.....
Newark, N. J.	1,531,562	635,772	140	.....
New Bedford, Mass.	1,338,050	57,437	2229	.....
New Britain, Conn.	408,995	84,015	386	.....
New Haven, Conn.	1,540,770	110,689	1291	.....
New York City:				
Boro of Brooklyn	6,958,805	2,520,286	176	.....
Boro of Manhattan	7,026,780	1,725,645	307	.....
Boro of Richmond	385,647	188,684	104	.....
Boro of Bronx	2,771,420	832,216	233	.....
Boro of Queens	7,123,396	542,056	1214	.....
Niagara Falls, N. Y.	364,541	126,600	187	.....
Oklahoma City, Okla.	756,821	317,269	138	.....
Omaha, Neb.	398,465	320,840	24	.....
Passaic, N. J.	79,020	15,225	418	.....
Paterson, N. J.	392,665	125,933	211	.....
Peoria, Ill.	260,900	55,055	373	.....
Philadelphia, Pa.	6,693,785	1,141,045	486	.....
Phoenix, Ariz.	276,707	197,181	40	.....
Pittsburgh, Pa.	1,362,049	978,642	39	.....
Portland, Me.	609,840	73,915	725	.....
Pueblo, Colo.	47,475	134,164	.....	64
Quincy, Ill.	29,000	.....	.....	.....
Quincy, Mass.	202,360	75,447	168	.....
Reading, Pa.	134,200	180,850	.....	25
Richmond, Va.	699,312	70,552	891	.....
Roanoke, Va.	182,295	19,780	821	.....
Rochester, N. Y.	1,193,357	60,555	1870	.....
Sacramento, Cal.	189,270	61,982	205	.....
Saginaw, Mich.	270,837	98,798	174	.....
Salem, Mass.	80,661	32,631	147	.....
Salt Lake City, Utah	447,990	119,480	274	.....
San Diego, Cal.	149,921	84,600	77	.....
San Francisco, Cal.	1,792,700	850,073	110	.....
San Jose, Cal.	65,539	60,980	7	.....
Savannah, Ga.	384,040	10,170	3676	.....
Schenectady, N. Y.	240,810	135,527	77	.....
Scranton, Pa.	68,440	91,047	.....	24
Seattle, Wash.	1,574,235	912,985	72	.....
Shreveport, La.	334,142	130,938	155	.....
Sioux City, Iowa	1,372,275	139,150	886	.....
Somerville, Mass.	84,360	132,200	.....	36
South Bend, Ind.	310,850	251,387	23	.....
Springfield, Ill.	271,905	48,295	463	.....
Springfield, Mo.	29,925	16,685	79	.....
Springfield, Mass.	776,540	124,035	526	.....
Springfield, Ohio	800,145	19,700	3961	.....
St. Joseph, Mo.	196,720	51,900	279	.....
St. Louis, Mo.	3,302,537	1,159,535	184	.....
St. Paul, Minn.	1,652,436	362,747	355	.....
Stockton, Cal.	190,172	56,439	236	.....
Superior, Wis.	232,215	34,399	575	.....
Syracuse, N. Y.	488,768	162,735	200	.....
Tacoma, Wash.	401,552	244,871	63	.....
Terre Haute, Ind.	70,450	56,752	24	.....
Toledo, Ohio	620,229	449,922	37	.....
Topeka, Kan.	93,630	18,375	409	.....
Troy, N. Y.	95,710	9,250	934	.....
Tulsa, Okla.	1,161,625	311,241	273	.....
Utica, N. Y.	749,035	179,375	317	.....
West Hoboken, N. J.	16,000	3,200	400	.....
Wheeling, W. Va.	31,488	50,067	.....	37
Wichita, Kan.	405,685	144,400	180	.....
Wilkes-Barre, Pa.	243,892	40,335	504	.....
Wilmington, Del.	656,537	164,411	299	.....
Worcester, Mass.	589,296	246,714	138	.....
Yonkers, N. Y.	278,700	30,800	804	.....
York, Pa.	134,010	10,770	1144	.....
Youngstown, Ohio	717,740	504,495	42	.....
Zanesville, Ohio	6,610	5,555	19	.....
Total	$130,746,609	$39,850,626	228	.....

Reports from the following cities arrived too late to be incorporated in the analysis:

Colorado Springs, Colo.	$ 52,229	$ 7,340	611	.....
Huntington, W. Va.	288,560	115,980	148	.....
Jersey City, N. J.	409,062	697,230	.....	41
Los Angeles, Cal.	1,887,609	820,480	130	.....
Medford, Mass.	107,785	28,870	280	.....
New Orleans, La.	790,001	183,049	331	.....
Pasadena, Cal.	181,623	37,274	387	.....
San Diego, Cal.	149,921	84,600	77	.....
Sioux City, Iowa	1,372,275	270,965	406	.....
Total	$ 5,239,065	$ 2,245,788	.....	.....

Henry Lieb, president of the Warren Plumbing Supply Co., Jersey City, N. J., has just returned from a trip through the Adirondacks, on which he combined business with pleasure.

James Traynor, of the Crown Die & Tool Works, Chicago, is calling on the trade in New York. A "Domestic Engineering" man met him in Syracuse last week.

William and Joseph Herbert, of the Herbert Boiler Co., Chicago, have been sojourning at Eagle Lake, Wis. A representative of "Domestic Engineering" found both of them having a fine time, with their families. "Joe" is driving a fine new Reo car and made the trip to and from the Lake in fine style.

C. R. Elliott, who handles the interests of the Wheeling Steel & Iron Co., Wheeling, W. Va., in the Southwest, with headquarters in Kansas City, is spending some time in Chicago this month with Chicago Manager A. S. Frampton. Mr. Elliott met many of his old friends at the Ridgemoor Golf Club, last week, when the Western Trade Golf Association held its regular tournament.

James A. McDonald, of the Promotion Department of the Standard Sanitary Mfg. Co., Pittsburgh, Pa., has contributed to the slogan, "they all fall sooner or later." He has become a life member of the A. O. B. and will pay his dues to a young lady, formerly named Miss Rinnie A. Grey, but who is now Mrs. McDonald. They are spending their honeymoon in Canada.

Flame Soldering the threaded collar and tube together to make sure that no leaks are possible.

J.B. WISE. Inc.

Manufacturers of Plumb

Mention DOMESTIC ENGINEERING

Flame Soldering

Insuring a Perfect Joint Between Tube and Threaded Collar

THEY are expert, these girls, in making positively leak-proof joints between tube and threaded collar on all "Wiseco" Products.

¶ This operation is called "flame soldering."

¶ After the flush ells, J- bends and straight sections of tube come from the various departments, threaded collars are then screwed on.

¶ Ordinary attaching is not sufficient—flame soldering is employed to make certain that the joint is perfectly non-leakable.

¶ These parts when thus assembled are ready for buffing rooms where they are polished in the brass, preparatory to the final treatment of nickel-plating.

¶ A word about these girls—they like their work as do all the employees of the "Wiseco" organization. They evince an interest in their duties that tends toward perfection of workmanship. It is to their interest to see that no slipshod methods are employed, that each piece leaving their hands is as perfectly wrought as modern appliances and skilled hands can make it.

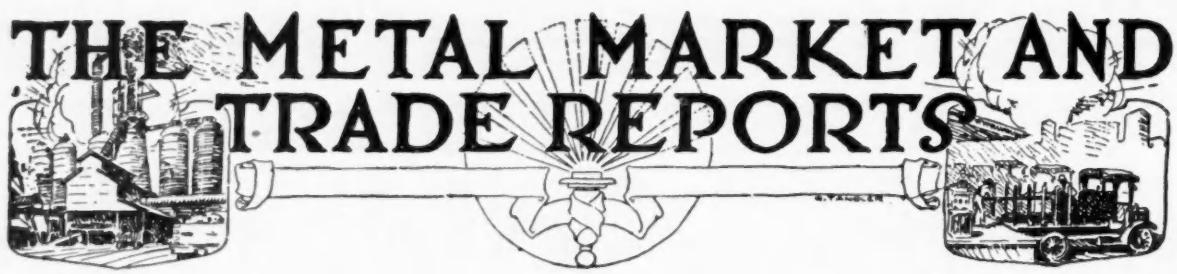
¶ Next issue of "Domestic Engineering" shows the automatic buffing machines.

"WISECO" Products

...Watertown, N.Y.

...Plumbers' Sanitary Brass Goods

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

Iron and steel exports during June totaled 544,580 tons, which is the greatest amount since December, 1917. Exports during February were less than half, and, all things considered, the June tonnage is what may be expected by way of exports for some time to come.

Reports from Washington indicate that Director General Hines of the Railroad Administration had made inquiries on the price of 100,000 tons of rails. Both grades, Bessemer and open hearth, have been identified with the inquiry, which is understood to be tentative, and on the estimate submitted by the producing companies will depend the size of the forthcoming order. No hopes are entertained, however, that there will be any material reduction in the scale submitted in the last reported sales. Demand for sheets, bars and wire products is being maintained at advanced rates just now. The plate situation has improved materially during the past week, and structural steel is said to be moving along lines of continued activity.

There is a continued demand for tubular goods, and on lap weld sizes the majority of the mills are sold up practically to the end of the year. Pig iron production during July was at the rate of 28,900,000 tons a year which, would be about 66 per cent of capacity, a gain of about 11 per cent over June. The increase in production has been entirely on the part of the steel interests, as production by merchant furnaces has actually fallen off some. But, on the whole, conditions are considered satisfactory. Better conditions are reported in the coke market in the Connellsville district, the output being 19,075 tons greater for the past week than was reported for the week previous. The edge is off the scrap market, and at present there is hardly a steel mill that would buy scrap today at any price that would be quoted. This applies in the Pittsburgh district only, however, as some mills in the West are still buying scrap in limited amounts. Prices are being maintained, however, as there is no scrap pressing on the market, and the buying movement may be restored at any time.

The reduction in ocean freight rates from North American to United Kingdom ports was received with considerable enthusiasm by interests engaged in shipping material overseas, and the opinion was freely expressed that with the more favorable terms, which can now be secured on forward movement of supplies, there is every chance for a material growth in the demand from foreign interests in the market here. Quotations on pig iron are as follows:

No. 2X, Philadelphia	$29.60
No. 2 Southern, Cincinnati	28.35
No. 2 furnace, Chicago	26.75
Basic Valley, furnace	25.75
Bessemer, Pittsburgh	29.35

Copper.

The smaller interests in copper are shading prices, and some small lots have changed hands recently as low as 23 cents. The larger dealers are fighting this tendency by maintaining quotations at the old levels, which are 23½ cents for spot, and 23¾ cents for August, with September quotation at 24 cents. With regard to the size of the present surplus of copper, throughout the country, advices from Boston indicate that previous estimates were too high, and that they accounted for all the copper in various forms, not necessarily the refined grade for immediate shipment to consumers. Present estimates indicate a very large shrinkage in the surplus, with the observation that the cut in price has been made in the face of a strengthening market and of advanced levels for sales. The present situation in the red metal is considered materially stronger than for a long time.

Tin.

Conditions in the tin market are dull, and there is a very quiet tone to the trading. The Metal Exchange reports no sales and quotes Straits at 70 cents on spot. Electrolytic is quoted at around 64 cents per pound, showing a slightly easier tendency.

Lead.

The lead market during the past week was dull and easy, with business very light. The American Smelting & Refining Co. continues to quote 6 cents per pound of lead in New York, and 5.75 cents in East St. Louis, but the outside interests lowered prices until they were quoting 5.75 cents to 5.85 cents per pound.

Spelter.

This market has been weak for the past week. The price which was generally quoted by the larger interests, was reported as from 7⅜ cents to 7½ cents per pound. The unsettled condition of the labor market was given by some interests as the most important element in the trade at the present time, but speculation may have something to do with it.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 50-ton lots)	33 cents per lb.
Antimony (Chinese and Japanese)	9 cents per lb.
Solder, No. 1	38 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying.	Selling.
Copper, heavy	19 to 19¼ cents	20 cents
Copper, light	16¼ to 16½ cents	17 cents
Brass, heavy	12½ to 13 cents	14 cents
Brass, light	9¾ to 10 cents	11 cents
Brass, turnings	13½ to 14 cents	15 cents
Tea lead	4¼ cents	5 cents
Lead, heavy	5¼ cents	6 cents
Zinc	5¼ to 5½ cents	6 cents
Solder joints	12 cents	13 cents
Mixed babbit	6½ cents	7 cents
Cocks and faucets	16 to 16½ cents	17 cents
No. 1 pewter	33 to 34 cents	35 cents
Tin foil	26 to 37 cents	38 cents
Siphon tops	35 cents	36 cents
Cast aluminum	24 to 24½ cents	26 cents
Old sheet aluminum	25 cents	26 cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying.	Selling.
Heavy yellow brass	11 to 11½ cents	12 cents
Brass, light	10½ to 10¾ cents	12 cents
Brass, medium	11¼ cents	12 cents
Red brass	17¾ to 18¼ cents	19 cents
Copper, heavy	18¼ to 18¾ cents	20 cents
Copper, light	17 to 17½ cents	18 cents
Lead, heavy	5 to 5¼ cents	6 cents
Tea lead	3¼ to 3½ cents	4 cents
Zinc	5¼ to 5½ cents	6 cents
Solder joints	10½ to 11 cents	12 cents
Cast aluminum	24 to 24½ cents	25 cents

LABOR SITUATION DISTURBS MANUFACTURER, JOBBER AND CONTRACTOR.

Chicago, August 13.—The present situation is not encouraging to manufacturer, distributor or contractor, on account of labor troubles. The main question appears to be "When will it end?" The sentiment in the Middle West in plumbing and heating circles is strong for a settling down movement so that everyone will know where he stands, and can plan accordingly. As it is now, costs and deliveries of materials are very uncertain, which has prompted announcements on the part of manufacturers regarding billing materials at prices prevailing at the time of shipment. Until business becomes stabilized the real substantial movement toward a resumption of normal activities cannot take place, is the general feeling.

No changes of importance have taken place in the plumbing and heating material market, except that it is reported that at least one manufacturer of plumbers' brass goods has advanced his prices in the neighborhood of 20 per cent. Manufacturers are far behind in orders. A peculiar situation is said to exist in the pipe market and one that is changing so frequently that it is hard to keep track of the turn of events. Shortages in various sizes of lapweld and buttweld products change around from week to week, making it essential to keep close to manufacturing operations in the effort to give customers satisfaction.

In the face of the housing shortage, which has brought despair to hundreds of thousands of homeseekers in eastern cities, figures have been made public showing that all high records for building operations east of the Mississippi have been smashed during the past seven months. The answer to the apparent contradiction, according to the F. W. Dodge Co., which has been collecting data, is that, while building loans were fairly easy to get by builders of warehouses, factories, public buildings, hotels and skyscrapers, the man who wanted to construct residences or apartment buildings usually found the money market closed.

The figures show the building boom is 20 per cent above the same period of 1918 and shows no sign of diminution. Since the first of the year contractors and material supply men are said to be expecting a continuation of the abnormal activity for three to five years.

Lockout Affects Permits in Chicago.

The Chicago building lockout has put the brakes on building permits. The report of the city building department for the past week furnishes unmistakable evidence of this, and the records show the issuance of 25 permits for structures to cost $647,000 as compared with 40, to cost $1,172,000 the preceding week.

Newspaper reports state that building throughout the Middle West is scheduled to slump, according to union leaders, who have taken action so that Chicago contractors, doing work in any city in this section, will be unable to obtain skilled labor. It is stated that thousands of skilled workmen have left Chicago owing to the lockouts. Conferences between employers and employes have been unprofitable and the deadlock continues.

INCREASED DEMAND FINDS DECREASED STOCKS IN EASTERN MARKET.

New York City, August 12.—A sharp, unexpected increase in demand is entering into the price situation on building materials in the eastern market. A week or two ago a condition of comparative stability obtained, and it was then thought that the supply and demand feature, which could be the only disturbing element, would not be felt before next spring, but a sudden demand, last week, for materials of all classes found jobbers without stocks, and prices went up in sympathy.

The situation, as it appears now, finds the jobber without stocks against the increasing demands, due to a long period of marking time, and producers, handicapped with short production in many instances, since the armistice was signed, and just able to meet current orders.

Jobbers in the plumbing and heating line are now attempting to accumulate stocks with the confidence that the market will be maintained at present or higher levels, and from this source comes the greatest demand on manufacturers.

The Pipe Market.

Quotations on less than car lots of full weight steel pipe are as follows:

	Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	46½	18½	.....	.....
½ inch	50½	34½	.....	.....
¾ to 3 inch	53½	38½	.....	.....
2 inch	.....	.....	46½	32½
2½ to 6 inch	.....	.....	49½	35½
7 to 12 inch	.....	.....	44½	29½

The quotations apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong steel pipe in less than car lots, quotations are as follows:

	Extra Strong				Double Extra Strong			
	Plain Ends		Plain Ends		Plain Ends		Plain Ends	
	Butt Weld		Lap Weld		Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
⅛, ¼ and ⅜ inch	37½	12½	.....	.....	.....	.....	.....	.....
½ inch	42½	17½	.....	.....	30½	.....	.....	.....
¾ to 1½ inch	46½	21½	.....	.....	33½	.....	.....	.....
2 to 2½ inch	47½	22½	.....	.....	35½	.....	.....	.....
3 inch	47½	22½	.....	.....	.....	.....	.....	.....
2 inch	.....	.....	39½	14½	.....	.....	28½	.....
2½ to 4 inch	.....	.....	42½	17½	.....	.....	30½	.....
4½ to 6 inch	.....	.....	41½	16½	.....	.....	29½	.....
7 to 8 inch	.....	.....	35½	10½	.....	.....	22½	.....
9 to 12 inch	.....	.....	30½	.....	.....	.....	.....	.....

With threads only, the basing discount is 1½ points lower. With threads and couplings the basing discount is three points lower. The quotations apply to less than ca lots.

Quotations on full weight genuine iron pipe, in less than car lots, are as follows:

	Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.
⅛ to ¼ inch	23½	+5½	.....	.....
⅜ inch	24½	+4½	.....	.....
½ inch	28½	8½	.....	.....
1¼ inch	33½	15½	.....	.....
¾ and 1 inch	33½	15½	.....	.....
1½ inch	33½	15½	.....	.....

2 inch	26½	10½
2½ to 6 inch	28½	13½
7 to 12 inch	23½	8½

These quotations are f. o. b. Pittsburgh, and apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong genuine wrought iron pipe, with plain ends, and in less than car lots, the quotations are as follows:

	Extra Strong				Double Extra Strong			
	Butt Weld		Lap Weld		Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	17½	+10½	.....	.....	.....	.....	.....	.....
½ inch	22½	+ 5½	.....	.....	.....	.....	.....	.....
¾ and 1 inch	28½	½	.....	.....	.....	.....	.....	.....
1¼ inch	28½	½	.....	.....	.....	.....	.....	.....
1½ inch	28½	½	.....	.....	.....	.....	.....	.....
2 inch	.....	.....	22½	+ 2½	.....	.....	.....	.....
2½ to 4 inch	.....	.....	24½	+ 1½	.....	.....	.....	.....
4½ to 6 inch	.....	.....	24½	+ 1½	.....	.....	.....	.....
7 to 8 inch	.....	.....	14½	+11½	.....	.....	.....	.....
9 to 12 inch	.....	.....	8½	+16½	.....	.....	.....	.....

These retail prices are f. o. b. Pittsburgh, and apply to all quantities except in car lots. With threads only, the basing discount is 1½ points lower. With threads and couplings, the basing discount is 3 points lower.

To ascertain the price in your city, deduct the proper less-than-carload freight rate from Pittsburgh to that city. Example: Base price on ½-inch black steel pipe is 50½ per cent, Pittsburgh, the less-than-carload rate to Patson is 17 cents, and the price, therefore, freight allowed to Patson 48$\frac{5}{10}$ per cent; on galvanized, 33$\frac{5}{10}$ per cent. All other sizes to be figured on a comparative basis.

The Pipe Market in New England and in Parts of New York State.

In New York State on all points on the Hudson River, and in all of New York State south and east of Albany, in all New England and for export, quotations are as follows:

Wrought Steel Pipe.

	Black	Galv.
⅛ to ⅜ inch	38	4
½ inch	43	26
¾ to 3 inch	47	31
2 inch lap	38	23
2½ to 6 inch	42	27
7 to 12 inch	33	16

Extra Heavy.

	Black	Galv.
⅛ to ⅜ inch	31	+ 2
½ inch	37	12
¾ to 1½ inch	42	18
2 to 3 inch	43	19
2 inch lap	34	10
2½ to 4 inch	37	14
4½ to 6 inch	31	12
7 and 8 inch	25	4
9 to 12 inch	18	+ 3

Double Extra Heavy.

	Black	Galv.
½ inch	16	....
¾ to 1½ inch	21	....
2 to 2½ inch	23	....
2 inch lap	14	....
2½ to 4 inch	16	....
4½ to 6 inch	15	....
7 to 8 inch	2	....
14 to 20 inch O. D	20	....

Genuine Wrought Iron Pipe.

	Black	Galv.
⅛ to ¼ inch	12	+25
⅜ inch	13	+24
½ inch	18	+ 4
¾ to 1½ inch	25	5
1¼ inch lap	net	+19
1½ inch	12	+ 6
2 inch	16	+ 2
2½ to 6 inch	18	1
7 to 12 inch	6	+12

Extra Heavy.

	Black	Galv.
⅛ to ⅜ inch	3	+30
½ inch	13	+17
¾ to 1½ inch	21	+11
1¼ inch lap	net	+34
1½ inch	10	+21
2 inch	13	+17
2½ to 4 inch	15	+13
4½ to 6 inch	6	+14
7 to 8 inch	+ 5	+26
9 to 12 inch	+12	+33

For pipe handled through shop or cut to length, add 10 per cent to the net price of pipe.

Cutting and threading 12 inch and smaller—net list prices.

Cutting and threading 14 inch and larger—25 per cent discount from list prices.

Cutting only, two-thirds of the threading price.

These prices include cartage to point of destination, if same is within cartage limits—for domestic purposes. If outside the cartage limits, they are f. o. b. shipping point, with actual freight allowed to destination, not exceeding 20c per 100 lbs. When shipped for export, the price includes cartage to point of shipment, if same is within reasonable cartage limits—with no freight allowance.

DANGERS ARISING FROM THE UPWARD TENDENCY OF PRICES.

Executive Secretary John C. Frazee, of the National Federation of Construction Industries, Drexel Building, Philadelphia, under date of August 5th, issues the following statement:

"The interview of the representatives of the Railway Engineers with the President on July 30th has attracted marked public attention. They pointed out the great dangers arising from the upward tendency of prices of the necessaries of life and indicated that, unless some influence was brought to bear to check this, it might be necessary for them to seek another increase in wages in order to reach a reasonable living scale. This is representative of a general condition. Higher levels of prices follow higher wages in a vicious spiral in which prices always keep in advance of wages, proceeding to a constantly higher level and resulting in instability of business and ultimate disaster.

"It is the good fortune of the country and to the credit of the construction industry, that the prices of building materials and construction in general have increased twenty-three per cent less than the price of other commodities, and that the pre-war dollar will thus go farther in buying buildings than commodities in general. This has occurred in spite of the facts that the prices of building materials have been greatly affected by the prices of other commodities and that freight rates on building materials have as a class been increased twice as much as those on other commodities.

"The welfare of this industry depends upon the continued and regular erection of buildings and not upon spasmodic booms. It is thus to the interest of the entire construction industry to maintain the present advantage of price differential in relation to other commodities, in so far as it may be able to withstand the pressure brought about by the continued advance of raw material, labor, freight, etc.

"This subject was carefully considered at the meeting of the Executive Committee of the National Federation of Construction Industries on July 31st, and it seemed desirable that the attention of the membership should be drawn to the foregoing considerations and to the national importance of the consideration of ways and means to bring about a decrease in the cost of general commodities.

"A full expression of views of manufacturers is asked. Every effort will be made by the Federation to promote a sound state of health in industry by encouraging the increase of production without increasing prices."

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

Mehring & Hanson, of 118 North Franklin Street, have been awarded the contract for the installation of the heating system in a six-story and basement warehouse, being erected at 493-515 East Illinois Street, for the Chicago Dock & Canal Co.

Wm. Lees, of 548 West Washington Street, has secured the contract for the heating, and the E. Baggot Co., of 17 East Lake Street, that for the plumbing in a $200,000 seven-story and basement office building being erected by the L. E. Waterman Co., at 1289 South State Street.

The contract for the installation of the heating system in the $150,000 factory being built by the Columbian Bank Note Co., at 500 South Ashland Avenue, has been awarded to Kohlbry-Howlett Co., of 111 West Washington Street, and that for the heating to the Jacob G. Weber Plumbing Co., of 2841 North Clark Street.

J. J. Daly, of 408 North Wells Street, will install the plumbing in the $75,000 automobile building being erected at Michigan and Twentieth Streets.

H. P. Reger & Co., of 128 North LaSalle Street, have secured the contract for the installation of plumbing and heating systems in a $60,000 two-story store and office building which is being erected at 51 Stony Island Avenue. This company also has the contract for the installation of plumbing and heating in a $65,000 store and office building at 6744 Stony Island Avenue.

The United Plumbing & Heating Co., of 3012 West Twelfth Street, will install a modern heating system in a two-story store, office and apartment building at Twelfth Street and Independence Boulevard.

G. F. Winkler, of 841 North State Street, is installing modern plumbing in a $40,000 two-story factory being erected at 2734 Greenview Avenue.

O. W. Jovien, of 133 West Washington Street, has secured the contract for the installation of a steam heating system in a two-story flat building being erected at 2419 West Monroe Street.

Other Cities in the State.

Lawrence Henschin, of 901 Taylor Avenue, Joliet, has been awarded the contract for the plumbing, and the American Foundry & Furnace Co., of Bloomington, that for the heating in a $20,000 school being erected in Fairmont Park, near Joliet.

The Patterson-Stewart Plumbing Co., of Springfield, has secured the contracts for the installation of plumbing and heating systems in the $50,000 three-story and basement candy factory being erected in that city by the John W. Bunn Co.

McDaniel & Stocker, of Wood River, are installing heating and plumbing systems in twenty bungalows in that city.

The Alton Plumbing & Heating Co., of Alton, has been awarded the contract to install plumbing and heating systems in the $125,000 Citizens' National Bank Building and will remodel the plumbing and heating work in the Drafton School.

George S. Brunner has secured the contract to install plumbing and heating systems in the block of stores and offices being built in Alton.

Thos. J. Fleming will install modern plumbing and heating in four houses now being built in Alton.

Wisconsin

The American Heating Co., of Superior, has been awarded the contract, amounting to $64,000, for heating systems in two new schools in Kenosha, Wis., and another of $19,060 for the installation of a plumbing and swimming pool equipment in the school to be built in Bessemer, Mich.

John Bauer, of Appleton, has just been appointed plumbing inspector of that city.

The city council of Manitowoc has decided to establish plumbing inspection in accordance with the state law. The plumbing inspector will receive a salary of $150 per month.

Texas

A stock company in Wichita Falls is erecting a $600,000 hotel in that city to be six to ten stories. The company has awarded the plumbing contract to J. Ries, of 3154 South Grand Avenue, St. Louis, Mo.

Some of the Ladies Attending the Recent San Antonio Convention of the Texas Master Plumbers' Association.—From "Domestic Engineering" Photo.

The Ford Plumbing & Heating Co., of Euloe, was the successful bidder for the contracts to install modern plumbing and heating in the $15,000 bank and store building, being erected in Paris by the Guaranty State Bank of Euloe.

Minnesota

St. Paul and Vicinity.

The building construction situation in St. Paul reflects as is natural the impetus of the nation-wide "Own Your Home" campaign which has found St. Paul directly co-operating with a home building campaign of its own, closing so far as intensive work was concerned with a concentrated publicity and window display effort the week of August 3rd to 9th.

July permits for plumbing construction include one to J. P. Simpson for work on the concrete candy factory of the Ramer Candy Co., at Grove and Olive Streets, valued at $15,000.

L. M. Sofie was given four different permits for work on four brick flat buildings of A. Heimbach, one located at Dayton and Prior Avenues, and the other three at Snelling Avenue and Fry Street. The valuations included one for $3,000, and three for $3,700.

J. A. Zeimet was given a permit for plumbing work on the brick building of C. L. Qualley at Montrose and Selby Avenues; valuation $1,200.

John D. Hyland took out a permit for plumbing work on the John Carroll frame dwelling at 1275 Lansing Street; valuation $1,052.

E. T. Kolar was granted a permit for plumbing work on the G. L. Anderson brick flat building at Front and Woodbridge Streets; valuation $1,190.

T. F. O'Neil took out a permit for plumbing work on the three-story brick building of Morris Fink & Son, Summit Avenue and Rice Street; valuation $9,565.

P. Adamson Co. was granted a permit for plumbing work on the W. N. Ivans frame dwelling at Summit and Lexington Avenues; valuation $3,200.

R. E. Roberts has the plumbing contract on the A. Moorman residence, 726 Goodrich Avenue; valuation $1,200.

H. A. Peterson has the plumbing contract on the Henry Dudovitz building at 218-220 Nelson Avenue; valuation $1,600.

T. J. Conroy was given a permit for plumbing work on the Wido-Bollo building at Eaton Avenue and Fillmore Street; valuation $977.

P. J. Leonard did the plumbing work in the remodeling at the S. S. Kresge Co.'s store, 57 East Seventh Street; valuation $1,500.

Other plumbing permits of note issued during July and early August follow:

To H. A. Peterson, dwelling of M. C. Lightner, 506 Summit Avenue.

To J. J. Bailey, work at Capital National Bank building.

To J. F. Farrell, stucco brick dwelling of Mrs. L. Kusel, Fairmount and Cretin Avenues.

To James Synan, Corning residence, 1 Crocus Hill.

To M. J. O'Neill, dwelling of L. J. Parrlicek, 567 Lincoln Avenue.

To M. C. Fuerst, dwelling of B. Bjornstad, Portland and Hamline Avenues.

To Abe Sachs, United States Postoffice garage, 53 West Third Street.

To Charles Lundstrom, dwelling of J. Olson, 1789 Portland Avenue.

To H. W. Bowe, garage of W. B. Flandrau and W. D. Clark, Dayton and Western Avenues.

To E. T. Kolar, F. Janisch dwelling, 1520 Randolph.

To J. P. Simpson, Ray Todd dwelling at 711 Lincoln.

Missouri

St. Louis and Vicinity.

Director of Public Safety McKelvey, states that August will be a record-breaking month for building permits, both in number and amount of money involved. Permits calling for the construction of more than $7,000,000 worth of buildings, which have been held up by a controversy over the city-zoning ordinances, will be issued very soon. Permits for several other buildings aggregating nearly $2,000,000 will be issued this week. Mr. McKelvey says further that he believes the building boom, which is now starting, will continue during the Fall. The large factory buildings which are to be erected will bring greater numbers of employes to St. Louis. There must be places to house them, and this will result in the erection of dwellings, apartments and high-class tenements.

The Thomas J. Sheehan Plumbing Co. has been awarded the contract for the installation of plumbing in the $6,000,000 factory buildings of the General Motors Corporation. The contract calls for an enormous plumbing system, and it is the second largest ever awarded in St. Louis, the largest being that for the plumbing in the Railway Exchange Building.

Among other projects to be started this month are the $1,000,000 Scottish Rite Cathedral, a $1,000,000 theater at Grand and Lucas Avenues, and a $1,000,000 hotel at Eighteenth and Lucas Avenues.

Less than thirty votes were cast in Boonville against the $70,000 bond issue for public improvements. The bulk of the money will go for city, sewer and water improvements, with $14,000 appropriated for public parks. The water and sewer work will open three new residential districts, which have been held up by lack of water and drainage. The sewer work will cost $46,000 and $10,000 will go for water improvements. It is understood that the city will advertise for bids at an early date.

An increase in the cost of building permits in St. Louis will go into effect September 1st, adding $40,000 a year to the fee receipts. The present fee is one dollar for the

George E. Smith, of Denver, Col., Member of the Board of Directors of the National Association of Master Plumbers.—From "Domestic Engineering" Photo, taken at the recent Atlantic City Convention.

first $1,000 expended for new work, alteration or repairs of buildings, and 50 cents for each additional $1,000. This rate will be doubled, using the same comparative scale. Inspection fees are almost doubled. The average receipts of the Building Commissioner's office are $30,000 annually. Last year, while so many government restrictions were placed on building activity, the office only netted $19,396.50.

Joseph A. Ries, 3154 South Grand Avenue, has secured the contract to install plumbing, sewerage and lighting systems in sixteen houses now being erected near King's Highway and Arsenal Avenue. He also has the plumbing contract on the new machine shop and garage to be built for the Sieloff Packing Co.

Werner Hencke Plumbing Co., 2335 South Grand Avenue, will remodel the plumbing system in a number of buildings at Jefferson Barracks, near St. Louis.

Pennsylvania

Philadelphia and Vicinity.

E. C. Struse, 119 Green Lane Avenue, has been awarded the contract to install plumbing and heating in a residence and garage being built for C. P. Ayres. Consideration, $9,000.

The Estate of George W. England, 235 South Fifth Street, has been awarded the plumbing contracts on seven large residences that are being built in St. Martins for Dr. George Woodward. Consideration, $35,000.

James Farley has been awarded the contract to install modern plumbing in eleven stores and in a moving picture theater being erected at Seventieth Street and Elmwood Avenue, for D. E. Hagan. E. R. Sabin & Co. have the heating contract.

James Hallinan, 5218 Vine Street, has been awarded the plumbing contract on seventeen residences that are being erected on Lebanon Street, for Ramsey & Williams. These houses will have private garages.

The West End Plumbing Co. has been awarded the plumbing contract on a new residence being built in Chester. Consideration, $5,000.

W. S. Roper & Co. have been awarded the plumbing contracts on two large residences that are being built in Drexel Hill for MacKenzie & Wiley. J. S. Hemphill will install the heating system.

N. Connolly, 1905 Ridge Avenue, has been awarded the heating and plumbing contracts on a new school that will be erected shortly in Glassboro.

Fisher Bros., of Harrisburg, have been awarded the plumbing contracts on seventeen residences that are being erected at Carlisle for C. A. Chandler.

Schreiber & Altenderfer, of Lebanon, have been awarded contracts to install modern plumbing in twenty-five residences that are being built in Lebanon for George Darkes.

George K. Morris, of North Wales, has been awarded the plumbing and heating contracts on a new bungalow being built in North Wales for H. Beaver.

J. M. Kirk, of Ambler, has been awarded the contract to install modern plumbing in a residence that is being erected for W. S. Rease, in Ambler.

Pittsburgh and Vicinity.

Plans are on file here for the East High School building at Erie, and local plumbing, electrical and ventilating firms are bidding on the work.

Bids are being taken for a new store and apartment building at Tarentum, for J. P. Coyle.

Plans will be completed in about a week for a store and dwelling on Eighth Street and Third Avenue, New Kensington, the plans now being in the hands of Architect W. J. Laughlin.

The plumbing work is included in the general contract soon to be awarded for a handsome new residence to be erected on Beechwood Boulevard, at Fenimore Street, for H. E. Wainright, the cost of which will be $75,000. Bids have been taken separately on the heating contract. Paul W. Irwin, Renshaw Building, is the architect.

Bids are being received this week for a parochial residence at McKeesport, owner St. Peter's R. C. Congregation; W. A. Thomas, Magee Building, Pittsburgh, is the architect.

Bids are being taken for a new lavatory and toilet system in the school building at Harmarville.

Deer & Ober have the contract for remodeling the plumbing in No. 11 engine station, South Ninth and Bingham Streets, and P. M. Feeney has the heating contract.

One of the largest contracts let in this district for many months was recently awarded to Lyle G. Emery & Co., by the Guarantee Title & Trust Co., of Butler, for the new Lowry House, to cost not less than $150,000. The plumbing contract will be awarded shortly and is estimated at about $16,000.

The Mackintosh-Hemphill Co., manufacturers of electrical appliances, have taken over sixteen acres at Aspinwall and will soon begin the erection of a new plant there which will give work to several thousand men. This plant will be near the great new power plant planned by the Allegheny County Light Co., which is to cost about $15,000,000.

Modern plumbing, lighting and heating plants are to be installed in each of the several hundred dwellings to be constructed by the Westinghouse Air Brake Co., in Wilmerding, Wall and Patton Township, for employes of the concern. A construction corporation, capitalized at $1,000,000 has been organized for the purpose of handling the enterprise.

New Jersey

Camden and Vicinity.

H. A. Kandall & Bro., of Camden, are finishing the installation of modern plumbing in six houses for R. H. Post at Riverton. Contract amounts to $6,590.

C. W. Cramer's Sons, of Camden, have secured heating contracts on the G. A. R. Post, Reid's Garage, Yorkship fire house and the St. Mary's Convent.

William J. Kelly, of 575 Ferry Avenue, is installing modern plumbing in a twenty-family apartment building on Kaighn Avenue, for H. Vandene. He recently completed the installation of the plumbing systems in two hundred houses in the New York shipyard.

Charles H. Leupold has opened a plumbing and heating establishment at 836 Broadway and a branch office in Clementon. He has the contract to install plumbing and heating systems in the office building at 703 Broadway and in twelve houses in Clementon.

Wm. P. Gable Co., of Camden, will install hot water heating systems in the W. H. Barber residence, and in residences for L. Baker and J. Pheifer, and a steam heating system in B. Flick's home.

F. W. Schorpp, of Camden, has been awarded the plumbing and heating contracts on stores that are being built in Camden for the Terminal Drug Co.

George Martin, of Pitman, has been awarded the plumb-

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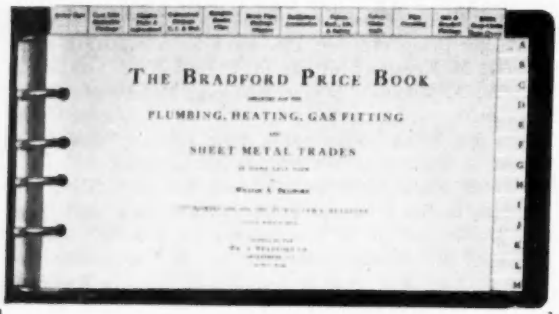

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Wm. A. Bradford

Department C

7 Maple St. Quincy, Mass.

ing and heating contracts on a new residence that is being built for A. Beith, Jr., in Woodbury Heights.

Other Cities in the State.

E. F. Rudderow, of Merchantville, has moved to 19 Gilmore Avenue. He is remodeling the plumbing and heating systems in the L. J. Giles residence

John Black & Son, 134 Prospect Street, Trenton, will install plumbing and heating systems in eighteen houses for W. J. Morris.

Eisele & Manning, of Haddonfield, are installing plumbing and heating systems in eleven houses, being erected by Gilbert & O'Halohan and H. T. Tompkins, and will remodel the plumbing and heating systems in the Haddon High School.

Plans are under consideration of the City Commission of Trenton for the establishment of public baths throughout the city. This project has been favored for some time by Mayor Donnelly, who contends that the baths should have been erected several years ago. The project will receive definite action when the new commissioner, who was elected July 22 to succeed the late Commissioner Burk, assumes office.

Massachusetts

Andrew J. Burnett, inspector of plumbing for Melrose and Wakefield, entertained the plumbers of those two municipalities at his home in Melrose on Saturday afternoon and evening, August 2nd. The spacious lawn was handsomely decorated and an interesting program was arranged.

John T. Corcoran, who for more than a quarter of a century has been engaged in the plumbing and heating business at Brockton, has sold his business, located in the Corcoran Building, on School Street, to the Hobart & Farrell Co., of 23 Franklin Street, Brockton. Mr. Corcoran will devote his time to real estate and other of his business interests. He is president of the Brockton Trust Co., and a member of the Killory-Corcoran Shoe Co. An interesting fact in connection with the change is that both Henry F. Hobart and Thomas M. Farrell, the new owners of the business, are former employes of Mr. Corcoran, having resigned some time ago to go into business for themselves. Mr. Corcoran began his business career in Brockton 26 years ago with a small shop in the basement of the Ryder Building, on Main Street, remaining there four years. During the following ten years he was located on High Street, and twelve years ago moved into a building which he had erected on School School.

The old carriage factory, so-called, on Rantoul Street, Beverly, is being remodeled for use as a plumbing establishment by the old established firm of Robert Robertson Co.

A new heating system is being installed in the postoffice at Indian Orchard, near Springfield, by T. J. Norris.

William Hay, of Fitchburg, and Elmer Hartwell, of Leominster, long employed as journeyman plumbers in Fitchburg and vicinity, have formed a partnership and will conduct a plumbing business in the Cushing Block, on Cushing Street, Fitchburg. Mr. Hay has been business agent of the local journeymen's union for the past two years.

Bids have been asked by officials of the Massachusetts Reformatory for Women, at Sherborn, for plumbing.

heating and other work in connection with a new officers' home to be erected on the reformatory grounds, and which will be arranged to accommodate 102 persons.

The town of Milford will soon spend $6,500 for new heating systems in various school houses.

Plans have been prepared by the city of Attleboro for school house additions and other work to cost in the vicinity of $150,000. The largest item will be for an eight-room addition to the Bliss School, for which $100,000 has been appropriated. A four-room addition to another school will cost $40,000, and $2,500 will be spent for new plumbing at the Sanford Street building.

Bangor and Vicinity.

Dyer & Rounds, 42 Columbia Street, have been awarded contracts for the installation of a vacuum heating system in the First National Bank, and modern plumbing in residences for James Cassidy, S. Eaton, M. Boydes, M. Gallagher and A. Corpel.

C. H. Babb & Co., 16 Exchange Street, have secured the contract to install plumbing and heating systems in the new public school on Thirteenth Street.

John Shea, 154 Park View Avenue, will install modern plumbing in St. John's parish house and parsonage on York Avenue, the heating system in the Municipal Building at Holland, and plumbing and heating systems in the new school at Lincoln.

Other Cities in the State.

Knight Bros. & Co., of Westbrook, were the successful bidders for the plumbing and heating contracts on three tenement houses for the Dayna Waup Mills, the heating contract on the Barrow Green Houses in Gorham, and the plumbing contracts on the State Street Block, Hoyt's residence and the Dupont Powder Co.'s blower works.

Watson & Brackett, of Westbrook, will install plumbing and heating systems in residences for G. C. Staple and J. Patterson.

H. S. Hudson, of Cumberland Mills, will install modern plumbing in summer homes for N. Davis, Mrs. C. R. McCoskey, Dr. Barrett and in the Ocean House Hotel.

John B. Allen, of Auburn, has secured the contracts to install heating and sprinkler systems in the manufacturing plant of the Ault William Shoe Co. and modern plumbing in the Hill Mill.

Eldreth Arnold, of Auburn, will remodel the plumbing system in the Home of Small Sisters and in several residences of the Jordan & Packett Estate.

J. W. Kern, formerly of 44 Bates Street, Lewiston, has moved into his new building in Auburn and will install modern plumbing in the residences of E. M. Neckerson, L. L. Dorntio, Bibberhouse, J. P. Sutton and A. J. Vermett.

J. B. McMahon, 54 Ash Street, Lewiston, is now installed in his new establishment and has added a fine large show room and complete stock of hardware to his plumbing and heating business. He has recently received the contract to install plumbing and heating systems in the Androscoggin County Court House, and will remodel the plumbing and heating equipment in the Munroe Shoe Co.'s plant.

J. E. Scott & Co., of Lewiston, were the successful bidders for the contracts to install heating in the Parker Spool & Bobbin Mfg. Co.'s plant and for the maintenance, upkeep and installation of plumbing and heating systems in forty-three theaters of the Union Theater Co.

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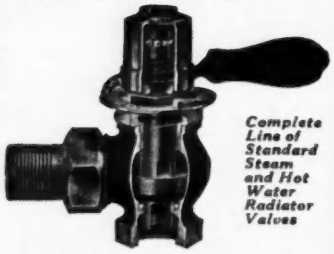

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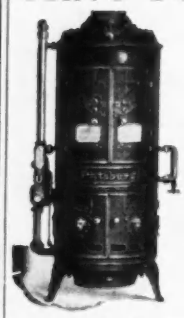

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Sturgis - - Michigan

The Estate of Gideon Picher, of Waterville, has been awarded the heating contract on the Highland Avenue School in Pittsfield, and plumbing and heating contracts on the Appleton Inn and residences for J. Bereube, A. Landey and J. Rancourt.

R. W. Hanson & Co., of Waterville, will install modern plumbing at Camp Kennebeck.

J. H. Nickerson has recently opened a plumbing and heating establishment at 17 Western Avenue, Waterville, and has been awarded contracts for the installation of modern plumbing in the dormitories of the Cobbin Classical Institute and in Dr. Reynolds' residence.

J. H. Cogan & Co., of Augusta, have been awarded a $10,000 contract to install plumbing, heating and ventilating systems in the Hallowell High School, and a $15,000 contract for similar work on the Augusta General Hospital.

Taber & Raid, of Augusta, has been awarded the contract for the installation of plumbing, heating and ventilation in the former residence of James G. Balin, of Maine, which was donated to the State of Maine by the heirs as a Governor's Home. This property adjoins the State House. The general contract is estimated at $30,000.

Connecticut

Members of the Master Plumbers' Association of Norwich, joined with the journeymen for their annual outing held at "Drawbridge," on August 8th. Some of the party went on an early morning train, while others made the trip by automobile, all returning in the evening. An athletic program, including a ball game, swimming matches and similar contests held the interest of the party during the day. At noon a chowder was served, and later in the day there was a clam bake.

F. A. Godfrey, who has been engaged in the plumbing business on Campbell Avenue, West Haven, for the past thirteen years, has sold his business to Robert G. Jordan, of New Haven. Mr. Jordan will continue the business under the firm name of F. A. Godfrey Co.

A new plumbing establishment conducted by David H. Taylor and Charles Ulrich has been opened on Fountain Place, Bethel. Mr. Ulrich is a practical plumber, having been for some time in the employ of the old established firm of F. A. Hull & Sons, while Mr. Taylor has had considerable business experience.

Indiana

Following a hearing conducted last week at Warsaw, the Indiana Public Service Commission issued an order which will definitely settle the water question for the citizens of Warsaw. The order provides for the sinking of wells in a gravel pit near Winona Lake and making the wells the source of water supply for both Winona and Warsaw. A new pumping station, reservoir and mains, to cost approximately $103,000, will be constructed. The commission acted on a recommendation of Jay A. Cravens, of Indianapolis, who recently made a survey of the water situation at Warsaw. Unfiltered water from Center Lake has been served to water patrons there for years, it was found.

According to a report compiled recently by Thomas Porter, sanitary inspector at Gary, 500 outhouses in the resi-

dential district of the city have been removed in the last seventeen months and substituted with up-to-date plumbing equipment. The removal of these places, the report points out, has brought about a big reduction in insanitary conditions there. The campaign to do away with all outhouses and install sanitary plumbing is being continued with renewed vigor.

H. H. Meerhoff, of South Ninth Street, Richmond, has been awarded the contract for the installation of the plumbing equipment in the new piano and gramophone factory that is to be erected there. The new structure will cost about $200,000. The heating contract was awarded to Charles Johanning, of 1036 Main Street, Richmond.

The plumbing and heating contracts on the new addition to the high school building at Bicknell, have been awarded to the firm of Kixmiller & Son, of Bicknell. The cost of the new structure is estimated at $35,000.

J. J. Quinn, of Bedford, was the successful bidder on the heating contract on the new addition to St. John's Episcopal Church in that city.

Nutzel & Co., of Muncie, were awarded the contract for the heating, ventilating and water supply system for the school building in Economy, the contract being for $9,500.

Kentucky

Louisville and Vicinity.

Business has shown a slight improvement in Louisville during the past few days, after the slump experienced in late July. While permits are still a little light, most of the plumbers are being kept fairly busy.

Haller, Zehnder & Redmon Plumbing & Heating Co. has recently installed a new ton-and-a-half truck to facilitate getting material to larger jobs.

W. R. Seestadt has again opened up in his plumbing establishment at 722 East Oak Street, which he had leased to Carl Althaus during the period of his services in the army.

Carl Althaus has leased a store room at 1130 Bardstown Road, where he will conduct a plumbing and heating business, carrying stock and a good show room and window displays. One-half of his store will be devoted to automobile supplies, with free air at the curbing. Fred J. Althaus, who has been at Sheffield, Ala., has come with his brother, and the business will be operated as Althaus Bros.

A meeting of building interests was held at the Board of Trade last week, George Schardein representing the Louisville Master Plumbers' Association. At this conference it was decided that the leading trades in Louisville would not accept any contracts of any size whatever except on the percentage basis, as labor and material conditions are too uncertain to take chances. The members of the Plumbers' Association are generally agreed on this matter.

George Schardein, of F. S. Schardein & Sons Co., discussing conditions, said: "We have all the work that we can handle and it is mostly small jobs where we are taking no chances on the future. We don't want any other kind. The Louisville shops are busy in every instance, and conditions from the profit standpoint are good."

Charles P. Pulliam, 24 years of age, son of Harry P. Pulliam, master plumber, of Shelbyville, and connected with his father in business, was fatally injured when a

D. F. Durkin, Vice-President, Master Plumbers' Association, says—No plumbers should be without the

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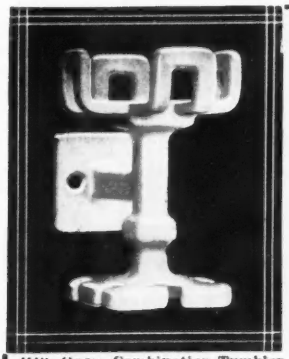

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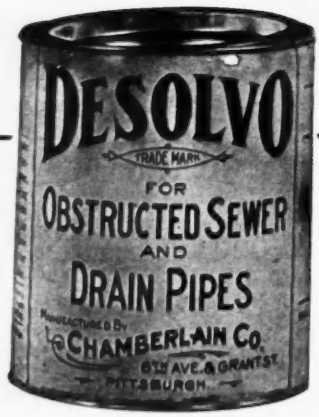

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truck he was driving was struck by a fast train on a grade crossing. He died shortly after reaching the hospital. Mr. Pulliam is survived by a wife and young child.

At the request of Louisville jobbers and manufacturers of plumbing supplies, the Louisville Board of Trade has requested the Louisville District Freight Traffic Committee for publication of a freight rate of 25 cents per hundred pounds on plumbing goods in carlots from Louisville to Nashville instead of present fourth-class rates of 35 cents per hundred pounds.

Charles Whitehead has purchased a new building at 202 St. Clair Street, Frankfort, to which he will move from 101 St. Clair Street.

Miller & Sauer, Jefferson Street, Louisville, have dissolved partnership. G. Phil Miller will continue in operation at 738 East Jefferson Street, while William L. Sauer & Co. have opened a plumbing establishment at 614 East Jefferson Street.

California

San Francisco and Vicinity.

Architects Rousseau & Rousseau have completed plans for the two new automobile buildings to be erected immediately. A two-story and basement fireproof sales room and machine shop is planned for the southwest corner of Golden Gate Avenue and Franklin Street at an estimated cost of $100,000. The other building is to be erected at Post and Hyde Streets.

James & Drueker have secured the contract for the plumbing and the Atlas Heating & Ventilating Co. that for the steam heating in a three-story frame building at Pine and Leavenworth Streets.

The Associated Oil Co. has contracted with Barrett Hilp for all construction work on a service station, comfort station and tool house at the intersection of Fifth Avenue, California and Cornwall Streets, at a cost of $4,485.

Two new six-story apartment houses are to be erected on Taylor Street in the near future, to cost in the neighborhood of $150,000 each.

Plans are being revised by Architect D. J. Patterson for a three-story apartment building to be erected on Twelfth Avenue, near Clement Street. The structure is to contain six four-room apartments, and will cost about $18,000.

Figures will be taken shortly by Architects J. E. Krafft & Sons for a six-story, class A building to be erected for Wellman Peck Co., at an estimated cost of $75,000.

Architect C. A. Tantau will shortly take separate bids on a two-story and basement frame and brick veneer residence to be erected at the corner of Vallejo and Buchanan Streets at an estimated cost of $30,000.

Figures are being taken by Architects O'Brien Bros. for the alteration of three flats into apartments in the Western Addition. About $15,000 will be used in improvements.

A three-story class C apartment building to contain twelve five-room apartments, is to be erected on Jackson Street, near Van Ness Avenue, at an estimated cost of $52,000. The plans are being prepared by Architect A. H. Knoll.

Plans are being prepared by MacDonald & Kahn, of San Francisco, for a $250,000 hotel in Vallejo. The structure is to be modern in every particular and will contain a ballroom, a dining room, grill, barber shop, lobby, and 140 guest rooms. The top floor is to be fitted up

for the needs of the Commercial Club. Steam heat, hot water supply and vacuum cleaning systems are to be installed.

Other Cities in the State.

The contract for the $20,000 club house for San Francisco working girls, to be erected on a site fronting Emerald Lake, near Redwood City, by Mrs. Mortimer Fleishhacker, has been awarded to W. C. Duncon.

W. G. Gorgin has purchased the plumbing establishment of F. H. Conway, of San Rafael.

Figures are now being taken by Architects Woolet & Lamb for the construction work on a four-story class A department store building to be erected in K Street, between Eighth and Ninth, Sacramento.

A plumbing establishment has been opened in Orland, by C. E. Abbott.

The property of the Capitola Hotel in Capitola, has changed hands and the new owner contemplates building a new hotel at a cost of $200,000, to contain 150 rooms with private baths.

Lucien Copes, who has been connected with the firm of Weed & Dickinson, at Calexico, for the past three years as plumber, has severed his connections with the company and opened his own establishment at 209 Third Street. Before coming to California, Mr. Copes had charge of a plumbing office in Hereford, Texas.

A two-story building is to be erected in the Van Aken property at Modesto, at a cost of $25,000.

Plans for the proposed swimming pool to be built in Mooney Park, Visalia, include a tank 70x170 feet.

The St. Francis hospital is planning the erection of a new building at Santa Barbara, to cost in the neighborhood of $100,000.

The new city administration at Santa Cruz, is to install two drinking fountains in Pacific Avenue.

A new open air salt water plunge is planned for Hermosa Beach, under the auspices of the chamber of commerce.

A. Y. Okita and K. Adachi, of Los Angeles, have filed articles of co-partnership, for the purpose of transacting business under the name of the Taisho Electric & Plumbing Co.

Chas. M. Swinnerton has been re-appointed master plumber member of the Los Angeles County Plumbers' Examining Board by the State Board of Health.

Oregon

Portland and Vicinity.

Plans have been completed by Architects Johnson & Parker for a new hotel building containing 300 rooms and baths, to be erected in Portland, Ore., at an estimated cost of $300,000.

Tourtellotte & Hummel, McKay Building, are preparing plans for the proposed school at Banks, Oregon. Structure will be 86x86 feet, costing $22,000, and will contain steam heating plant.

Hedges & Huls submitted the low bid for general contract for the school building at the Dalles, at $25,420, receiving contract.

Warrenton Investment Co., a Portland concern, plans the construction in Astoria, of a new motion picture theatre which will cost $100,000 and seat 1,800 persons. Details of the plan have not been completed.

Glasser Construction Co., of Spokane, received the

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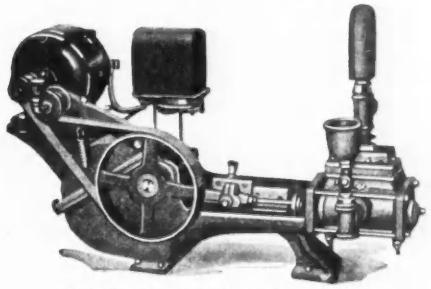

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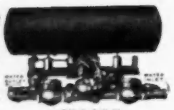
Here's The Farnsworth Double-Action Feeder!

The Farnsworth Duplex Boiler Feeder is the only machine of its kind on the market for returning condensation to boilers under pressure at a high temperature. It feeds **continuously**, one chamber feeding while the other chamber is receiving.

There are 12 styles and 25 systems—one to handle the condensation problem at your plant.



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This shows the machine which is saving steam plants from 1 to 10 tons of coal per day.

"The greatest coal saver ever offered the steam plant."

FARNSWORTH CO. Conshohocken, Pa.

Engineers and Manufacturers of Condensation Pumps

SISSON

Insertable Joint

is indispensable to plumbers for connecting up new fixtures to soil pipe, or for use where a defective length or cracked fitting must be taken out.

Saves springing stack and removing whole lengths of pipe.

You cannot afford to get along without the SISSON. Ask for prices and particulars.

R. ESTABROOK'S SONS, 1st and C Sts., South Boston, Mass

Dayton Water Supply Systems

Made in two sizes—120 and 210 gallons per hour.

Efficient deep well pumps—125 to 2,000 gallons per hour.

The Dayton Pump & Mfg. Co.

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ELECTRIC HOUSE PUMPS — Dayton — WATER SUPPLY SYSTEMS

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THE EFFICIENT CLOSET SEAT

HEAVY COVERING ASSURES LIFE-LONG SERVICE — ACID-PROOF — IMPERVIOUS — STANDS ABUSE LIKE A BOWLING BALL — CONCEALED HINGES — INDISPUTABLE QUALITY

RECOMMEND THIS PROFIT MAKER

ASK YOUR JOBBER OR SEAT DEPT.

THE BRUNSWICK-BALKE-COLLENDER CO.
623 SO. WABASH AVE. CHICAGO

general contract for the three and a one-half story building for the Vale Milling & Elevator Co., at Vale, Oregon. Contract for the plumbing and hardware supplies was awarded to the Vale Trading Co.

Architect Fred A. Legg, of Salem, is preparing plans for the Lausanne Hall at the Willamette University. Structure will have steam heating system, gymnasium, shower baths and modern plumbing fixtures.

Washington

Seattle and Vicinity.

W. F. Dugay and G. A. Pringle, both of Seattle, have formed a partnership as consulting engineers and contractors engaged in steam and hot water heating. Offices have been opened at 201 Boston Block.

Architect William Mallis, 409 Lyon Building, is preparing plans for building a $35,000 school building in Maple Valley, bids will be called for in about 30 days.

Rautmann Plumbing & Heating Company has received the contract to remodel the plumbing and heating systems in the new home of the Hopper-Kelly Co., Manhattan Building. Structure is being completely remodeled.

A hospital costing $150,000, and similar to Mayo's of Rochester, will be erected in Seattle by a group of doctors, headed by Dr. J. Tate Mason, Green Building. The structure will be five stories, 120x120 feet, of reinforced concrete fireproof construction. It will have accomodations for 50 patients, and will employ specialists.

Architect J. R. Nevins, Hoge Building, has completed plans for a modern home for George Boodle, Jr. Structure will cost about $20,000, and will contain several baths and a hot water heating system. J. H. Tolman, general contractor, will let all sub-contracts.

General Engineering & Construction Co. has secured the contract for a two-story masonry store and apartment building to be built for C. H. Taylor, Stuart Building. Structure will be 84x44 feet and will contain eight, two and three-room apartments, with private bath for each. A hot water heating plant will be installed.

The Fern Hill School Board has rejected all bids for construction of addition to the present structure, which would have added ten school rooms, an auditorium and gymnasium. The total of the lowest bids reached $174,852, while the district had expected to spend $100,000 on the work.

New York

A. F. Deichsel of 584 East One Hundred and Sixty-ninth Street, Manhattan, has secured the plumbing contract on five new apartment buildings to be erected at Teller Avenue and One Hundred and Sixty-fifth Street, the Bronx. The construction cost will run $60,000 each.

Ernest J. Staby has opened a plumbing and heating establishment at Syossett, Long Island. Mr. Staby was formerly connected with W. G. Cornell Co., of New York City.

Mayor Pierce, of Dunkirk, has appointed Thomas Earnshaw as master plumber member of the City Plumbing Board, succeeding George P. Sippel, who has moved to Erie. Matthias Duenzen was appointed journeyman member, to succeed Charles Pfisterer, who has resigned.

Cincinnati and Vicinity.

Conditions among the plumbing and heating interests in Cincinnati and vicinity continue good as the summer advances. The trade is satisfied with the business being transacted this season and is anticipating enough repair and remodeling work to keep everybody busy this fall. Construction work now under way calls for the best of materials, in almost every instance.

The Love, Piket & Nulsen Co., for more than twenty years located at the northwest corner of Eighth Street and Broadway, will move its office to 1640 Vine Street, on September 1st. The work department will be at 1637 Hamer Street.

William Botley has been awarded the contract for plumbing on a home being built by Mrs. Ellen J. Sweeney in Hyde Park. The heating contract was awarded to the Rybolt Heating Co.

Oliver Schlemmer Co. has secured the heating contract on the large residence being erected for Joseph Loeb, in Avondale. Helmer & Renn have been awarded the contract for plumbing.

A six-story, fireproof building on the north side of Fourth Street, just west of Plum Street, is to be erected by E. J. Harth, for loft and light manufacturing usage.

The Bricher Plumbing Co. has been incorporated in Dayton with a capital of $5,000 by Nicholas H. Bricher and others.

The contract for a heating plant for the high school in Lorain will be awarded in the near future.

NEWS FROM NOVA SCOTIA.

Halifax and Vicinity.

The Halifax Sheet Metal Works, 22 Upper Water Street, recently secured the contracts to install plumbing and heating systems in the Bellevue Hospital and in sixteen new residences in Halifax.

C. R. Hoben & Co., 134 Granville Street, have been awarded the contracts for the plumbing and heating work in the Administration Building at the Halifax Dock Yard and in the Halifax Station House. They also will install modern plumbing in the Halifax School for the Deaf.

H. G. Hagen & Co., of Halifax and Sydney, have secured contracts for the installation of modern plumbing in 326 houses for the Halifax Relief Commission and in the Children's Hospital. They will also install plumbing and heating systems in the Camp Hill Hospital.

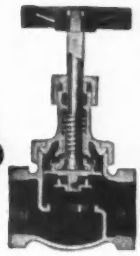
Laugards, Ltd., has been awarded contracts to install the heating system in the Children's Hospital and plumbing and heating systems in the Read Trigan Hut for returned soldiers.

Farquhar Bros. have secured the $45,000 contract to install plumbing and heating systems in the Navy League, the $52,000 contract for similar work in the Dalhousie College and a $35,000 contract on the Alexander McKay School.

F. G. A. Munro, of Yarmouth, was the successful bidder on the plumbing and heating contracts on the Casmas Cotton Mills.

R. W. Currier, of Yarmouth, has secured contracts for plumbing and heating installations in the Phone Building, the Royal Bank of Canada and in the Empire Garage.

MARSH
UNION BONNET
DOUBLE SEAT
VALVES



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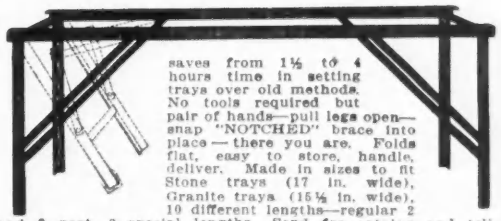
ALL STYLES AND SIZES

Let us send you catalogue showing line complete and quote prices on your requirements.

MARSH VALVE CO. - - Erie, Pa.

The "JIFFY" Folding Laundry Tray Frame



saves from 1½ to 4 hours time in setting trays over old methods. No tools required but pair of hands—pull legs open—snap "NOTCHED" brace into place—there you are. Folds flat, easy to store, handle, deliver. Made in sizes to fit Stone trays (17 in. wide), Granite trays (15½ in. wide), 10 different lengths—regular 2 and 3 part—8 special lengths. Send for catalog and tell your jobber size wanted.

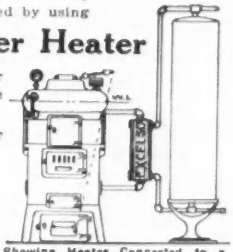
THE FORD DONLEY CO.
1940 East 117th St. Cleveland, Ohio

Economical Hot Water
for domestic use can be secured by using
The Excelso Water Heater

In connection with any steam or vapor boiler. No coils to interfere with fire.

Simplest and most efficient water heater made.

Three sizes — tank capacities, 40, 70 and 100 gals. for use below water line. Heats storage tanks up to 800 gals. with live steam.



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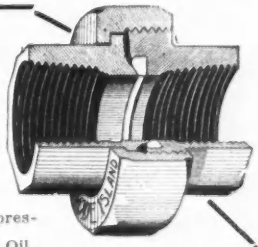
601 WHITE BUILDING BUFFALO, NEW YORK

Rhode Island Union



Positive Joint
Bronze Seat
No Packing
No Gasket

Guaranteed 300 lbs. working pressure.
For Steam, Water, Gas and Oil.
The best is cheapest in the end—use the

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Write for Catalog.

RHODE ISLAND FITTINGS COMPANY
HILLS GROVE, R. I.

Wolverine Heavy Brass Flanges
WITH SPRING HOLDERS

The Flange That Stays In Place

20 Graduated Sizes of Hole 1/8" to 2"

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Heating Specialists

Modulated and Vacuum Heating Systems
Adapted for all Types of Buildings

Over 25 Years' Experience

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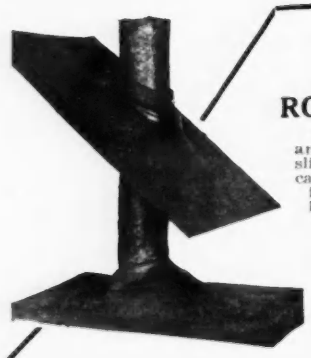

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ROOF FLASHER

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The Yoder-Thomas Mfg. Co.
1024 B. of L. E. Bldg.
CLEVELAND, OHIO

NIEDECKEN MIXER

For Shower Lavatory Bath Sink Etc.

Write for Bulletin D-10-X

HOFFMANN & BILLINGS MFG. CO.
MILWAUKEE

REMOVING OIL FROM CONDENSATION.

(Continued from Page 303.)

each side of the filter. When the pressure difference reaches 2 or 3 pounds, the filter may be cleaned by reversing the flow of water through it by manipulation of the valves "A" and "B," which are designed especially for this purpose.

Another filter of a similar type uses Terry cloth drawn over perforated cylinders. The construction of these is such

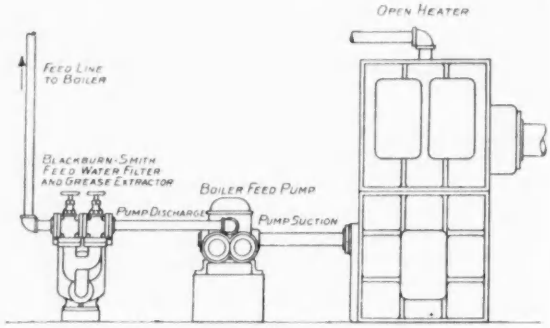


Fig. 10.

that double filtration is secured through two independent surfaces.

The number of cylinders used varies with the size of the unit. The accumulation of foreign material is indicated by pressure gauges, the same as already described in connection with Fig. 9. Cleaning is accomplished by first removing the cartridges from the filter chamber and inserting fresh ones, which should always be kept in stock, thus reducing the period of non-operation to a minimum. After removal from the chamber the perforated shells of the cartridges are taken apart and clean Terry cloth inserted.

Two methods of installing this filter are shown in Figs.

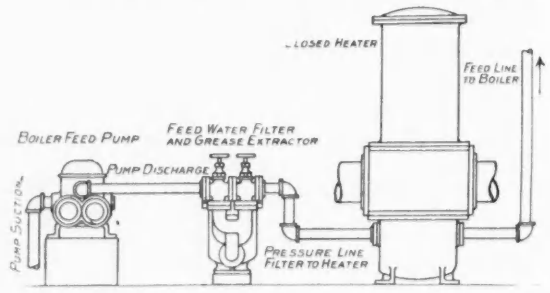


Fig. 11.

10 and 11, the first applying to its use with an open feedwater heater, and the second with a closed heater. The various pipe connections are clearly indicated in the cuts and require no special explanation.

Another filter employs a cloth cartridge, one end of which is closed while the other is fitted to a casting like a valve disk, which rests upon and closes the end of the body.

By removing a few bolts in the head of the cartridge, it may be taken out, the filtering cloth removed and a fresh one drawn on. By-pass valves at the top are so arranged that the water may be sent direct to the boilers during the short period required to change the cloth.

Filters of the general type just described are very compact, easy to clean and made in sizes to meet the requirements of both large and small plants.

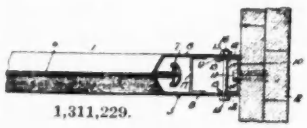
Patents

Plumbing Department.

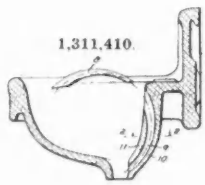
1,311,229. Toilet Partition. Arthur Sheridan Hughes, Mansfield, O. Fastening means for securing the wall stile of a sheet metal partition to a wall, comprising a channel member made fast to the wall and provided with flaring sides, with the stile having an open edge and embracing and compressing the side walls of the channel, and the channel and stile being secured together by through bolts traversing the side walls of both.

1,311,410. Process of Molding Ceramics. Daniel W. McNeil, Cincinnati, O., assignor to The John Douglas Co., Cincinnati, O., a corporation of Ohio. A method of molding ceramics having interior indirect passages, consisting in assembling the clay into embryonic form of the object to be molded, embedding loosely therein a core having regularly curved outlines, molding the clay around the core and to the shape of the article to be molded, removing the core, and firing the molded clay.

1,311,819. Storm Sewer Inlet. William Hutton and William Jorgensen, Omaha, Nebr. A monolithic combined curb, catch basin and trap provided at its upper portion at the front with a horizontal inlet opening and having its front wall forwardly offset at the lower edge of the inlet opening and its rear wall inclined upwardly and forwardly opposite the said opening and upwardly, and rearwardly inclined bars having their ends embedded in the offset front wall and the inclined rear wall to form a grating.



1,311,229.



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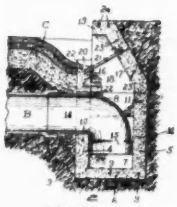

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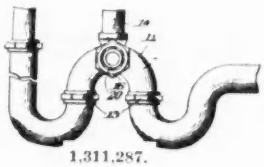
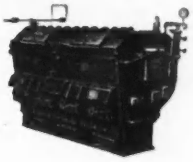


1,311,287.

1,311,287. Sanitary Trap. Robert Nicholas Murphy, Ottawa, Ontario, Canada. A trap of the class described comprising a pair of water seals, an air chamber intermediate of the water seals and adjusted relatively thereto, a ventilating pipe connected to the air chamber, and means engaging with the air chamber adapted to flush the water seals and ventilating pipe individually and successively.

1,311,241. Basin Waste Fixture. William G. Newton, New Haven, Conn., assignor to The Peck Bros. & Co., New Haven, Conn., a corporation. A basin waste fixture comprising a casing, a crossed plate plug carrier mounted therein, a plug at the upper end of the said carrier, said carrier provided at its lower end with a hook having its nose offset from the plane of the carrier and an operating shaft with which said centrally arranged downwardly projecting hook may engage, and means for operating said shaft.

ECONOMY  EFFICIENCY

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Saves Fuel Labor
Manufactured only by
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Dependable Showers
Easily set for desired temperature.
The Milwaukee Mixer
precludes all danger of scalding.
Made in a variety of designs.
Valve either exposed or concealed.
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Order from your jobber.
The Milwaukee Flush Valve Co.
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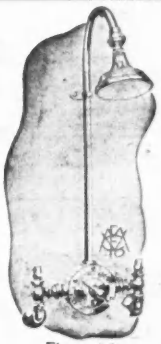

Fig. C. 30

Where specifications call for a high grade shampoo fixture, you can safely install
The "S & K" Rainbow
C-955 is one of our latest models. Quick action. A time-saver for the operator. In ordering, specify distance from center of cock holes.
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C-955
Basin Cocks
Quick
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FOR SANITARY REASONS
WHEN
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Your Customer Will Pay More and Make More Profit For You
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Base Section When Used Without Ring Section.
Champion Auxiliary Heater
Fits any hot air furnace. Increases heating capacity. A business-getter and profit-maker. Try it.
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"CROWN" Post Pipe Vise
Can be attached to any wood or iron post or pole without nails or screws. Holds tight and firm.
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STANDARD PORTABLE VISE BENCH
STANDARD IRON WORKS, Inc.
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Fig. 155—Steel Sink Bracket
CENCO
Floor and Ceiling Plates
Pipe Hangers, Clamps and Specialties
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Manufacturers
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Largest Makers of
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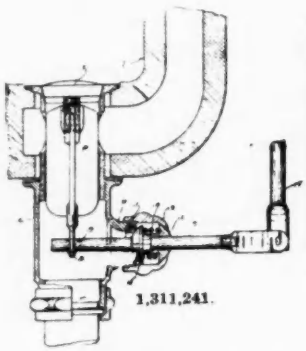
KEWANEE, ILLINOIS

TRADE A-S-M-Co MARK
Nickel Plated Brass Specialties
Manufactured by
American Sanitary Mfg. Co.
Abingdon, Ill.

1,311,365. Flushing Valve. William Sears White, Denver, Colo., assignor to The White Flushing Valve Mfg. Co., Denver, Colo., a corporation of Colorado. A flushing valve including a container having an inlet, and an outlet; a water chamber in communication with the said inlet and outlet, a vertically movable valve in said chamber controlling the inlet, an auxiliary chamber above the water chamber, an air chamber, passages establishing communication between said auxiliary chamber and the air chamber, means controlling communication through said passages, and means establishing communication between the auxiliary chamber and the water chamber, said means including a vertically slidable tubular member at the top of the water chamber, together with a member on the vertically movable valve to engage said vertically slidable member.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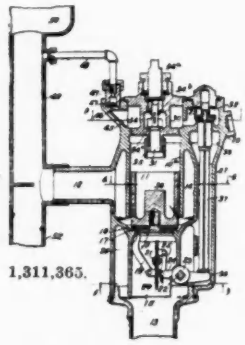
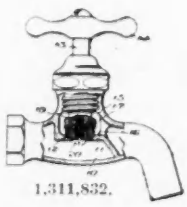

1,311,365.

1,311,832. Seat Washer and Stem. Philip Mueller, Decatur, Ill. In combination, a valve stem having upon its end a serrated rib, and a valve head fixedly carried by said stem and having its opposite ends beveled to form seating surfaces, said rib being spaced radially from said seating surfaces of the head to prevent mutilation thereof.

1,311,833. Sanitary Drinking Fountain. Philip Mueller, Decatur, Ill. A bubbler head for sanitary drinking fountains, comprising a spherical body portion of vitreous material having a drinking stream passage therethrough, an imperforate guard formed integral with said body portion and extending outwardly and upwardly from one side thereof, and a connecting member secured to the bottom of said body portion, said member having therethrough a drinking stream passage and provided with a cone shaped projection at its bottom to collect and solidify the waste water coming from the bubbler head.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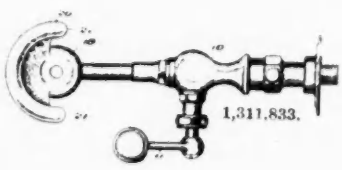
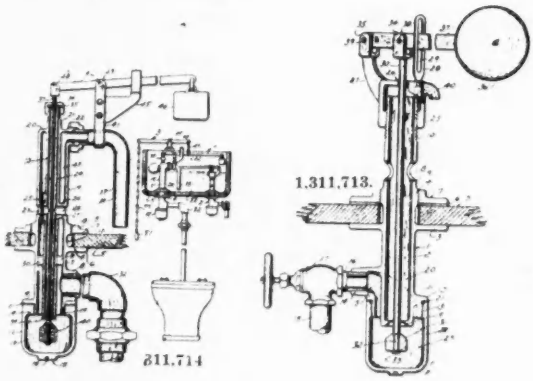

1,311,833.

1,311,714. Flush Tank Siphon Mechanism. Arthur P. Richardson, Los Angeles Calif,. A flush tank siphon mechanism comprising the combination with a flush tank box having a large opening formed through its bottom, of a casting having a flange fitting upwardly against the lower face of the bottom, a neck extending downwardly from the flange, an internally screw threaded boss extending laterally from the lower end of the neck, a second flange extending outwardly from the lower end of the neck below the boss, an externally screw threaded nipple extending downwardly

from the second flange, a neck extending upwardly from the first flange loosely through the opening in the bottom of the box, an externally screw threaded enlargement extending upwardly from the neck, an extension extending upwardly from the enlargement, a web extending part way across the upper end of the extension, an externally screw threaded nipple extending upwardly from the web, an externally screw threaded union member extending laterally from the upper end of the extension below the web, there being a passage through the union member and downwardly from the web to the lower end of the first nipple, a pipe extending from the web and from the nipple downwardly to the lower end of the first externally screw threaded nipple, and hollow braces connecting the pipe to the wall of the extension; a cap having a large chamber and a reducing flange at the upper end of the chamber, the reducing flange being screwed upon the first externally screw threaded nipple against the second flange; an outlet pipe connected to the boss and leading downwardly; an intake pipe connected to the union member and extending downwardly to a point just above the bottom; a cap screw seated upon the nipple above the web and having a central opening; a valve stem mounted through the cap and extending through the pipe to the cap chamber; a valve seat at the lower end of the pipe; and a valve upon the valve stem in the cap chamber to fit the valve seat.



1,311,713. Automatic Inlet Valve Mechanism for Flush Tanks and the Like. Arthur P. Richardson, Los Angeles, Calif. An automatic inlet valve mechanism comprising a water column casting having a tubular neck formed integral with a clamping flange and extending downwardly from the flange, an externally screw threaded portion extending upwardly from the flange, a tubular portion extending upwardly from the externally screw threaded portion and having discharge openings, an externally screw threaded portion extending upwardly from the said tubular portion, a valve seat head extending downwardly from the tubular neck and having an outwardly extending horizontal flange, an externally screw threaded nipple extending downwardly from the last named flange, an internally screw threaded nipple extending laterally from the upper part of the head above the said last named flange, there being a passage leading from the internally screw threaded nipple downwardly through the externally screw threaded nipple, a valve seat formed in the lower face of the valve seat head; a cap screwed down upon the externally screw threaded portion, there being a central opening through the cap; a pivot bracket extending outwardly and upwardly from the cap; a guide bracket extending upwardly from the cap at the opposite side of the opening from the pivot bracket, said guide bracket having a vertical slot; a valve stem inserted downwardly through the

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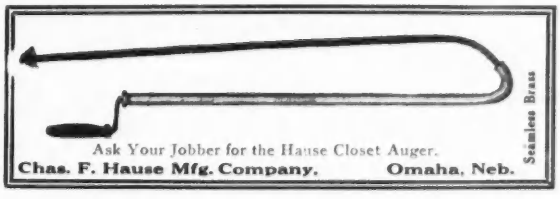
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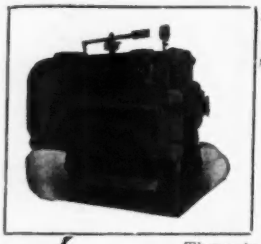

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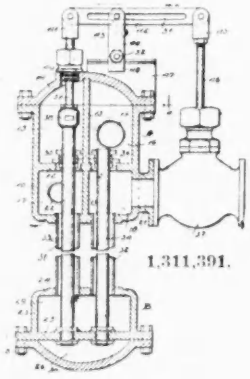
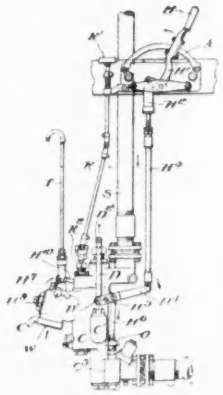
opening and through the water column casting; a valve upon the lower end of the valve stem in position to engage the valve seat; a bifurcated head upon the upper end of the valve stem; a second bifurcated head upon the upper end of the pivot bracket; a float lever connected to the second bifurcated head and to the first bifurcated head and inserted through the slot in the guide bracket; a float upon the float lever; and a cap screwed upon the externally screw threaded nipple of the valve seat head and covering the valve seat and the valve and connecting the passage from the internally screw threaded nipple to the interior of the water column casting through the valve seat.

Heating Department

1,311,391. Water Heater. Charles C. Hansen, New York, N. Y., assignor to Thermal Appliance Co., Inc., New York, N. Y., a corporation of New York. In a water heater of the class described the combination of header structure having water and steam compartments, steam pipes connecting said steam compartments, water pipes connecting said water compartments and passing through said steam pipes, a valve for controlling the seam flow, a stuffing box on the top of said header, an expansible member anchored at one end and extending through one of said steam pipes and through said stuffing box, a lever pivoted at one end to said expansible member and at its other end to the stem of said valve, a transversely extending rib integral with said header top, said rib having guide grooves in its opposite sides, a bifurcated fulcrum post receiving said rib and having tongues in its opposite sides for engaging in the rib grooves, a bolt extending through said post for drawing the bifurcated ends thereof together to clamp said rib, said post at its upper end having pivotal connection with said lever.



1,311,391.



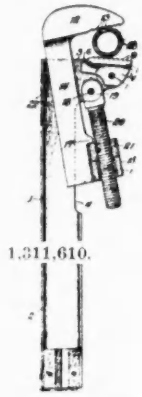
1,311,631.

1,311,631. Boiler Feeding Injector. Belvin T. Williston, Somerville, Mass., assignor to The United Injector Co., Boston, Mass., a corporation of New York. In a boiler feeding injector, the combination with the final overflow valve, of a water supply closure valve, and connections between the two said valves to insure the closing of one as the other is opened, and vice versa, a lost motion device in said connections to accommodate changes in positional relationship of members associated with said connections, and an elastic member inserted directly in said system between the operating end of the system and the final overflow valve, to exert persistent closure stress upon said final overflow valve.

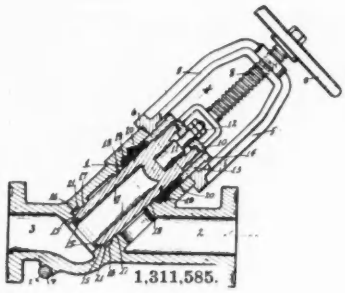
1,311,610. Pipe Wrench. Harry Alvin Michael, Beaver Falls, Pa. A pipe wrench comprising a handle, a jaw fixed thereto, another jaw associated with the first-named jaw and provided with a shank, an adjusting screw pivoted to the jaw end of the handle and extending away therefrom and

connected to the shank of the movable jaw to constitute a support and pivot for said movable jaw, and a spring on the handle engaging the rear of the shank of the movable jaw at a point closer to the jaw-carrying end of the handle than the pivot end of the adjusting screw.

1,311,585. Valve. Frank Baird, San Francisco, Calif., assignor to Pacific Foundry Co., San Francisco, Calif., a corporation of California. A valve structure comprising a body-member having an inlet and an outlet and having also a seat, an annular liquid seal depression in advance of said seat and an annular seal ring in advance of the depression,

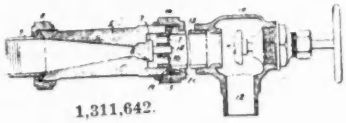


1,311,610.



1,311,585.

said seat, depression and ring lying within the zone of communication between the inlet and outlet, said body member having also above said communication a second annular seal ring and following it a chamber for a packing instrumentality; and in a reciprocative valve-plug member having a push-fit in both seal rings of the body member and having also an extremity adapted to coact with the seat of said body member to open and close the valve and a tapered portion in advance of said extremity to lie opposite the liquid-seal depression of the body member when the plug-member is seated.



1,311,642.

1,311,642. Check Valve. Hans Gustav Joachim Deinert, Big Spring, Tex. A valve comprising a casing having a valve seat at its outlet end and a passage leading to said seat from the inlet end of the casing, a check valve engageable with the seat, a nipple opposite the outlet end of the first mentioned casing, a second valve casing connected to the nipple and having a shut-off valve, a guide for the check valve held between the end of the first-mentioned casing and the adjacent end of the nipple, and a coupling member connecting the nipple and the first-mentioned casing.

The office of the Director of Sales of the War Department announces that it is preparing to offer for sale under sealed bids its surplus of brass, totaling approximately 192,347,057 pounds. Communications embracing offers for this brass, or inquiries concerning it, should be directed to the District Ordnance Offices in various cities.

The War Trade Board secretary announced August 8th that American consuls abroad have been instructed that it is no longer necessary to require evidence of the issuance of an import license before certifying an invoice covering the shipment of any commodity whatsoever, notwithstanding such commodity may be one whose importation is still subject to control by individual license.

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Hidden in the heart of every "ALLRIGHT" is a hoop of steel which binds the joints and holds the seat intact.

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WANTED AT ONCE—TWO FIRST class steamfitters. Union. 80 cents, eight hours. Box 304, Lorain, O. 8-16

WANTED—SEVERAL GOOD PLUMBing design men and draftsmen for plumbing layouts, on large factories and offices. Address 2701, care "Domestic Engineering," Chicago. 8-6

WANTED, PLUMBER—ONE WHO CAN deliver the goods will be given steady work the year round at satisfactory wages. Address John H. Giese, Mitchell, S. Dakota. 8-16/9-6

WANTED — A GOOD THOROUGH heating and plumbing supply man for wholesale plumbing supply house, to work in office and outside. Apply with full information to the A. D. Dennison Company, Cleveland O. 8-16

WANTED—SALES ENGINEERS TO sell the "Wiley" line of improved Vapor Heating Appliances. Good territories open. Simplex Heating Specialty Co., Inc., Lynchburg, Va. 5-3tf

WANTED—SALESMEN TO HANDLE our line of plumbers', steamfitters' and Anglyn brand brass goods, on commission basis. Territory in every state. Write Angster & Lynch, Newark, N. J. 2-22tf

LARGE ESTABLISHED PLUMBING and heating concern has opening for experienced heating engineer and estimator. Considerable experience and ability required. State experience and salary expected. Address 2695, care "Domestic Engineering," Chicago. 8-9tf

WANTED—COMPETENT AND WELL experienced man to take charge of plumbing and mill supply house. House just opening up. Location western part of Virginia. Prefer man who knows the trade in Virginia, West Virginia, Tennessee and North Carolina. Good pay and opportunity for man who can deliver the goods. Apply 2693, care "Domestic Engineering," Chicago. 8-2tf

Situations Wanted

YOUNG MAN EXPERIENCED IN sales department wholesale jobber plumbing supplies, desires to make change and to secure connection with manufacturer or jobber offering position with advancement in their sales department. Reply, state particulars relative to duties and salary offered. Address 2700, care "Domestic Engineering," Chicago. 8-16

MANAGER OR SALES MANAGER, seeks engagement. Would like to get into touch with those desiring new blood in their business. Capable of organizing and systematizing. Result producing. Can "make good" wherever put. A correspondent forceful, tactful, constructive along broad lines, thoroughly trustworthy and a hard, hustling worker. Have been successful in everything previously undertaken. Aged 40 years. But recently resigned from responsible position, desire connection permanently with concern desiring change or who wish to be relieved of exacting executive cares. Either medium size factory plant or important branch office. References from eminent sources. Address 2699, care "Domestic Engineering," Chicago. 8-9;16

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FOR SALE—USED PLUMBING AND heating material, radiators and boilers. D. B. Plumbing & Heating Sales Co., Fort Wayne, Ind. 8-9tf

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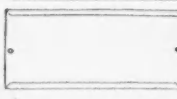
FOR SALE — OLD, WELL ESTABlished plumbing and heating shop, with a well established trade. At present employ four journeymen and a foreman. Enough work on hand at present to use three or four more men. Good reasons for selling. It will require from fifteen to twenty-five thousand dollars. If you do not mean business and do not have the money, do not answer this. Shop is located in thriving Pennsylvania town of 100,000 population. Address 2702, care "Domestic Engineering," Chicago. 8-16

Miscellaneous.

WANTED—SECOND HAND SAUNDERS I X L Motor Driven Threading Machine. Send full particulars. Henry Meyer, Bucyrus, Ohio. 8-9;16



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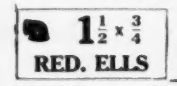

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Government Proposals

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., August 4, 1919. Sealed proposals will be opened in this office at 3 p. m. Sept. 2, 1919, for additions to plumbing in the United States Post Office and Court House, Parkersburg, W. Va., in accordance with the specification and drawing, copies of which may be had at this office or at the office of the Custodian, Parkersburg, W. Va., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-9;16

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., July 29, 1919. Sealed Proposals will be opened in this office at 3 p. m., August 19, 1919 for water supply connections at the United States Marine Hospital at New York, N. Y. (Stapleton), in accordance with specifications and drawings, copies of which may be had at this office or at the office of the Supervising Chief Engineer, Frank A. Lang, 731 Custom House, New York, N. Y., in the discretion of the Supervising Architect, Jas. A. Wetmore, Acting Supervising Architect. 8-9;16

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., August 11, 1919.—Sealed proposals will be opened in this office at 3 p. m., September 8, 1919, for furnishing materials for the construction of the United States Post Office at Carroll, Iowa, including materials for concrete, reinforced concrete, stone, granite, brick, structural terra cotta, structural steel miscellaneous iron and steel work, composition roofing, slate roofing, sheet metal work, skylights, plastering, interior marble, sanitary slate, lumber, millwork, painting, glazing, hardware, plumbing, heating, electric work, etc., in accordance with drawings, specifications and bills of quantities attached thereto, copies of which may be obtained from the Custodian at Carroll, Iowa, or at this office, in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-16

GOVERNMENT SALE OF Steam Boilers and Engines,—50-80 H. P. Boilers; 8-30 H. P. Engines; 2-96 H. P. Engines. Sealed bids will be opened 10 A. M. August 26, 1919 at Munitions Bldg., Surplus property Division, Washington, D. C. Particulars, special bid forms can be obtained at above office or Zone Supply Offices, attention Surplus Property Officer, following Cities: Boston, New York, Baltimore, Philadelphia, Atlanta, Jeffersonville, Ind., Chicago, St. Louis New Orleans, San Antonio, Omaha, El Paso, San Francisco. Refer to S. P. D. Nos. 2793, 2777, 2743 & 2225 M. E. 8-9; 16

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